ADMINISTRATIVE RECORD FILE INDEX

FINAL

SITE NAME: Odessa Drum Company

SITE NUMBER: TXD008012254

INDEX DATE: April 11, 1991

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

FACT SHEET

Administrative Records in Local Repositories

The "administrative record" is the collection of documents which form the basis for the selection of a response action at a removal site. Under section 113(k) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), EPA is required to establish an administrative record for every CERCLA response action and to make a copy of the administrative record file available at or near the site.

The administrative record file will be available for public review during normal business hours. The record file is treated as a non-circulating reference document. Individuals may photocopy any documents contained in the record file, according to the photocopying procedures at the local repository.

The administrative record file will be maintained at the local repository until further notice. Documents may be added to the record file as the site work progresses. EPA may send supplemental volumes and indexes to the local repository to be placed with the initial record file.

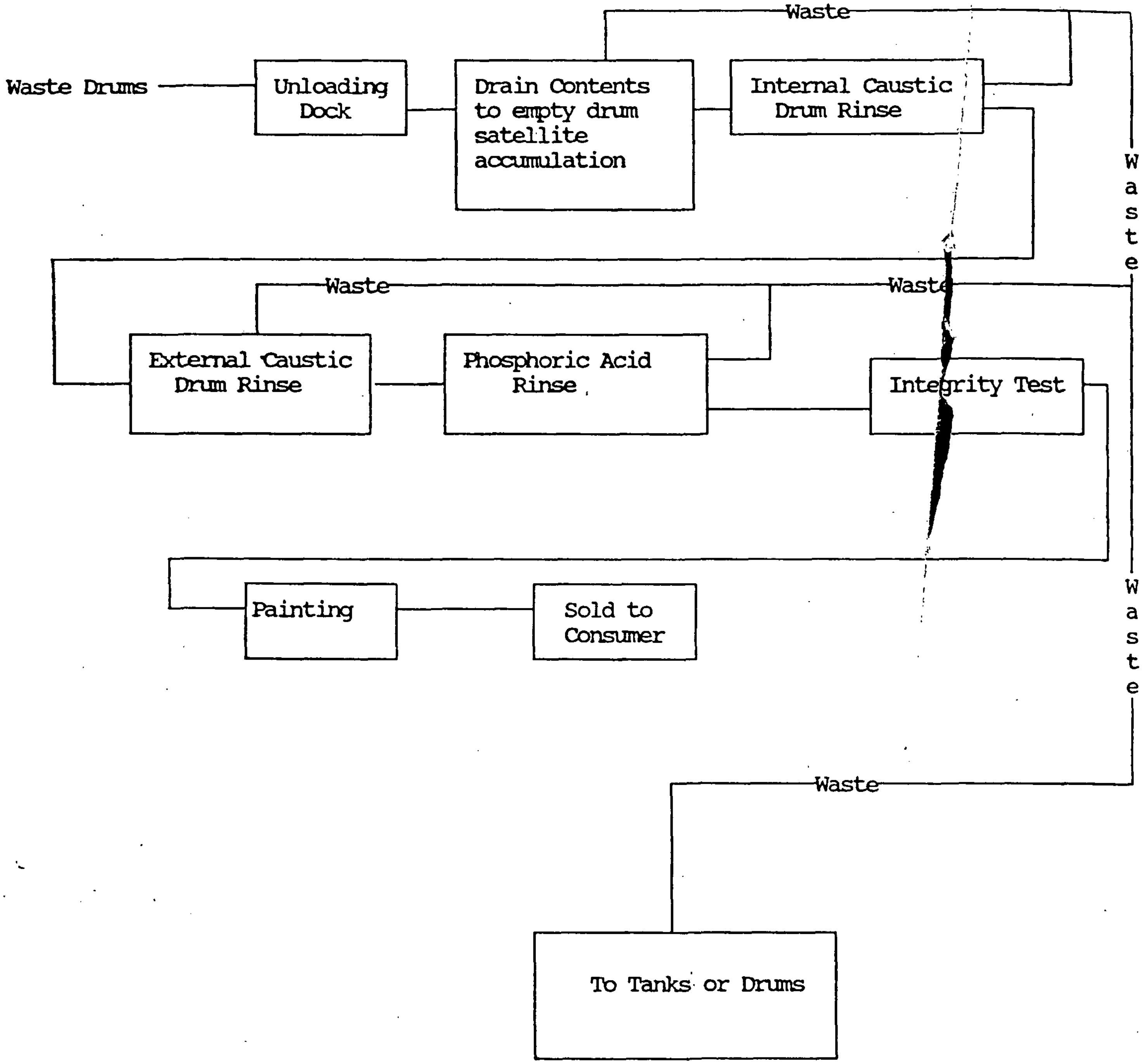
The Agency may hold formal public comment periods at certain stages of the response process. The public is urged to use these formal review periods to submit their written comments. EPA welcomes written comments at any time on documents contained in the administrative record file. Please send any such comments to:

U.S. EPA
Removal Administrative Record Coordinator
Emergency Response Branch (6E-E)
1445 Ross Avenue
Dallas, TX 75202

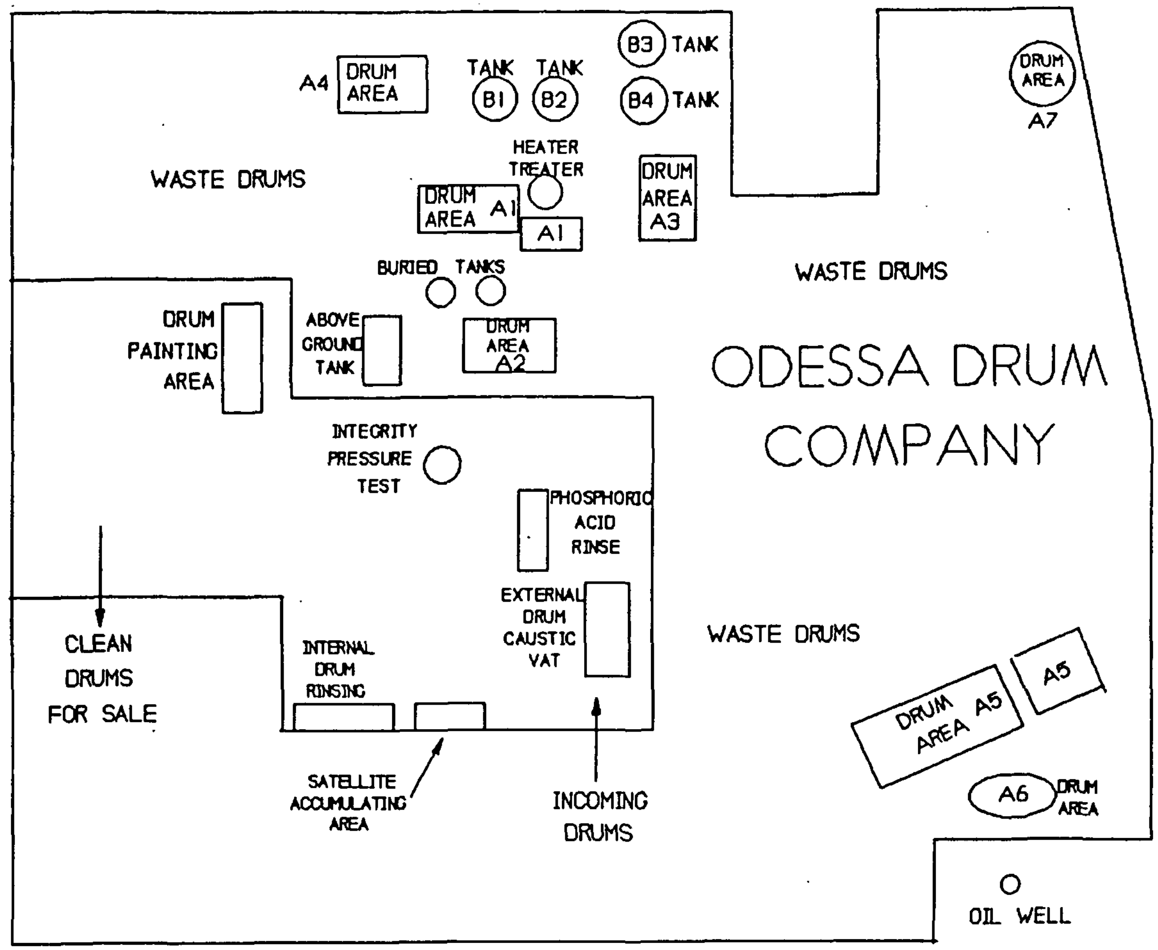
COMMONLY USED ACRONYMS

ADPC&E	Arkansas Department of Pollution Control & Ecology
AO	Administrative Order
ATSDR	Agency for Toxic Substances and Disease Registry
CDC	Centers for Disease Control
CERCLA	Comprehensive Environmental Response Compensation & Liability Act of 1980
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
ERB	Emergency Response Branch
ERCS	Emergency Response & Cleanup Services
FOIA	Freedom of Information Act
LDEQ	Louisiana Department of Environmental Quality
NPL	National Priorities List
NMEID	New Mexico Environmental Improvement Division
OSDH	Oklahoma State Department of Health
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
POLREP	Pollution Report
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act of 1976
ROC	Record of Communication
SARA	Superfund Amendments and Reauthorization Act of 1986
TAT	Technical Assistance Team
TWC	Texas Water Commission
TDWR	Texas Department of Water Resources

FLOW CHART FOR ODESSA DRUM



000001


ODESSA DRUM COMPANY
A4 DRUM AREA
TANK B1
TANK B2
B3 TANK
B4 TANK
DRUM AREA A7
WASTE DRUMS
HEATER TREATER
DRUM AREA A1
A1
DRUM AREA A3
WASTE DRUMS
BURIED TANKS
DRUM PAINTING AREA
ABOVE GROUND TANK
DRUM AREA A2
INTEGRITY PRESSURE TEST
PHOSPHORIC ACID RINSE
EXTERNAL DRUM CAUSTIC VAT
CLEAN DRUMS FOR SALE
INTERNAL DRUM RINSING
WASTE DRUMS
DRUM AREA A5
A5
A6 DRUM AREA
SATELLITE ACCUMULATING AREA
INCOMING DRUMS
OIL WELL

0000002

ADMINISTRATIVE RECORD FILE INDEX

FINAL

SITE NAME: Odessa Drum Company
SITE NUMBER: TXD008012254

RECORD NUMBER:	1
DOCUMENT DATE:	Undated
NUMBER OF PAGES:	1
AUTHOR:	Unspecified
COMPANY/AGENCY:	Unspecified
RECIPIENT:	Site Files, Region 6
DOCUMENT TYPE:	Flow Chart
DOCUMENT TITLE:	Flow chart for Odessa Drum.

RECORD NUMBER:	2
DOCUMENT DATE:	Undated
NUMBER OF PAGES:	1
AUTHOR:	Unspecified
COMPANY/AGENCY:	Unspecified
RECIPIENT:	Site Files, Region 6
DOCUMENT TYPE:	Site Sketch
DOCUMENT TITLE:	Odessa Drum Company

RECORD NUMBER:	3
DOCUMENT DATE:	07/26/90
NUMBER OF PAGES:	291
AUTHOR:	Mark Ezell, Technical Assistance Team
COMPANY/AGENCY:	Ecology and Environment, Inc.
RECIPIENT:	Greg Fife, OSC, U.S. EPA Region 6
DOCUMENT TYPE:	Site Assessment Report
DOCUMENT TITLE:	Site assessment report on Odessa Drum Company, including: analytical results and summary, QA Plan and TWC files.

ADMINISTRATIVE RECORD FILE INDEX

FINAL

SITE NAME: Odessa Drum Company
SITE NUMBER: TXD008012254

RECORD NUMBER:	4
DOCUMENT DATE:	08/02/90
NUMBER OF PAGES:	14
AUTHOR:	Gregory Fife, OSC
COMPANY/AGENCY:	U.S. EPA, Region 6
RECIPIENT:	Robert E. Layton, Jr.; Regional Administrator, EPA Region 6
DOCUMENT TYPE:	Action Memorandum
DOCUMENT TITLE:	Request for Removal Action at the Odessa Drum Company site.

ecology and environment, inc.
12021 LAKELAND PARK BOULEVARD, BATON ROUGE, LOUISIANA 70809, TEL. (504) 291-4698
International Specialists in the Environment

CERCLIS NO. TXD008012254

SITE ASSESSMENT REPORT

ON

ODESSA DRUM COMPANY
ODESSA, ECTOR COUNTY, TEXAS

Prepared for

EPA - REGION 6
EMERGENCY RESPONSE BRANCH

J. Chris Petersen
Deputy Project Officer

Ecology and Environment, Inc.
Technical Assistance Team

26 July 1990

000003

recycled paper

ecology and environment, inc.
12021 LAKELAND PARK BOULEVARD, BATON ROUGE, LOUISIANA 70809, TEL. (504) 291-4698
International Specialists in the Environment

CERCLIS NO. TXD008012254

26 July 1990

TO: Greg Fife, OSC
EPA Region 6, Emergency Response Branch

THRU: J. Chris Petersen, DPO
EPA Region 6, Emergency Response Branch

THRU: Kishor Fruitwala, TATL
Region 6, Technical Assistance Team

FROM: Mark Ezell
Region 6, Technical Assistance Team

SUBJECT: Site Assessment - Odessa Drum Company
Odessa, Ector County, Texas

TDD No. 06-9004-09A
PAN No. TTX1120SAA

BACKGROUND

Odessa Drum Company (ODC) is an inactive drum recycling facility located at 2214 Alice Street, Odessa, Ector County, Texas (Figures 1 and 2). The facility operated from 1962 to 1989 and encompassed approximately 10 acres. The company owned 5 acres and leased 5 acres from Mr. Bob Yates of Odessa, Texas. ODC received waste chemical drums from various industries including chemical plants and oilfield service companies. Drums entering the facility would first be drained of their contents into drums or tanks for satellite accumulation, internally and externally rinsed with caustic and phosphoric acid solutions, integrity tested, painted, and sold as reconditioned drums (Figure 3). This process generated waste from the original contents of the drums and the contaminated rinsate solutions. According to the Texas Water Commission (TWC) files (Attachment 5), ODC generated approximately 5000 gallons of rinsate waste monthly. Historical laboratory analysis of the rinsate solutions frequently met the minimum Resource Conservation and Recovery Act (RCRA) characteristics for corrosivity, flashpoint, and Extraction Procedure (EP) for toxic metals. TWC conducted numerous inspections from December 1985 to June 1989 and subsequently issued numerous Notice of Violations (NOV) of which only one has been resolved (Attachment 5). At the request of the TWC, the

Environmental Protection Agency (EPA), Region 6, directed the Technical Assistance Team (TAT) to conduct a site assessment.

SITE ASSESSMENT

On 24 - 27 April 1990, TAT members Jim Dellinger, Mark Ezell, Ray Ferrell, Bob Marguccio, and R. Steve Pierce, and EPA On-Scene Coordinator (OSC) Greg Fife conducted a site assessment of the ODC site (Figure 4). The property owned by ODC consisted of a large recycling building (Slides 1 - 3), a small office building (Slides 4 and 5), a drum rinsing vat, six above ground storage tanks (Slides 6 - 9), a heater treater (Slide 10), and an estimated 200,000 55-gallon drums. The majority of the drums were stacked horizontally (Slides 11 - 17) or crushed (Slides 23 and 24) and were believed to be empty. An estimated 5,000 upright drums contained liquids (Slides 18 - 20) and approximately 100 of these were located within a secondary concrete containment. The containment walls were in good condition and appeared to contain rainwater and liquids from leaking drums (Slides 41 and 45). The leased property had approximately 10,000 drums scattered over the 5 acres. An estimated 2000 drums contained liquids (Slides 27 - 31). Various labels and markings were found on many of the drums including "Hazardous Waste" and "Flammable Liquid" (Slides 21 and 22). Both properties are easily accessible to the public due to incomplete fencing (Figure 4; Slides 25 and 26).

The site is located in the middle of a residential neighborhood with an estimated four to five hundred people living within a one-quarter mile radius. Nine residences border the 10 acre site (Figure 4) and in several locations drum storage areas are only a few feet from residential yards (Slides 34 and 35). One of the neighboring residents has recently installed a potable water well approximately 10 feet from a drum storage area containing leaking drums and drums in various stages of deterioration (Slides 37 - 40). Stained soil and stressed vegetation was observed in many locations (Slide 42). An [redacted] Odessa, Texas, informed TAT that on 5 September 1989, ODC spilled a brown liquid, having a "strong caustic odor" onto his property. According to [redacted], ODC excavated the contaminated soil and backfilled with new soil. Stormwater run-off from the north and east side of the site is uncontrolled and allowed to flow through residential properties (Figure 4). Stormwater run-off from the west and south side flows into the Alice Street drainage ditch which borders several residential properties (Figure 4).

AIR MONITORING

TAT performed air monitoring with an HNU ISPI-101 Photoionozer with a 10.2 ev probe, field calibrated to a benzene standard, and a Century 128 GC Organic Vapor Analyzer (OVA) field calibrated to a methane standard. Air monitoring was conducted throughout the site. The only readings above background were found directly around the drum bung holes and ranged from 5 - 200 part per million (ppm) methane equivalents (Slides 43 and 44).

SAMPLING METHODOLOGY

On 25 and 26 April 1990, TAT performed drum sampling on 57 drums and a drum rinsing vat, to identify potential hazardous contaminants through laboratory analysis. The drums were opened, head space was monitored with an HNU (Slide 45), and samples were taken (Slide 46), and hazard categorized (Attachment 4; Slides 47 and 48). Through hazard categorization the samples were composited into nine distinct groups (Table 2). One composite soil sample was collected from stained soil around drum storage areas on the leased property. A total of 10 composite samples were sent to NDRC Laboratories Inc., Dallas, Texas, for analysis of volatile organics, semivolatile organics, polychlorinated biphenyls (PCB), pesticides, EP toxic metals, and RCRA characteristics.

Quality assurance measures included preparing and implementing a Quality Assurance/Quality Control Sampling Plan (Attachment 3), and establishing a Quality Assurance Level 2 for laboratory samples, in accordance with the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01. Data validation was conducted upon receipt of the analytical package from the laboratory (Attachment 2).

ANALYTICAL RESULTS

Analytical results (Table 1) did not indicate the presence of EP toxic metals, PCB's, or pesticides. Sample number OD1009 was a composite of six drum samples and exceeded the RCRA ignitability limit for hazardous waste with a flashpoint below 60^{o} Celsius. Two composite drum samples met or exceeded the RCRA corrosivity (pH) limits for hazardous waste with a pH of less than 2 or greater than 12.5; sample number OD1002 was a composite of three drum samples with a pH of 0.5 and OD1003 was a composite of six drum samples with a pH of 12.5.

Composite soil sample results (S1001; Table 1) showed no detectable PCB's, pesticides, or EP toxic metals above RCRA hazardous limits. Volatile and semivolatile organics that were detected include chloroform, toluene, phenanthrene and pyrene.

SUMMARY

On 24 - 27 April 1990, EPA Region 6 TAT conducted a site assessment on the ODC site in Odessa, Ector County, Texas. ODC is an inactive drum recycling facility which operated from 1962 to 1989. The site consists of 10 acres, of which 5 acres are leased. The site contains an estimated 210,000

55-gallon drums, with approximately 7000 containing liquids. There are numerous locations where the soil is stained and vegetation is stressed or dead. The surrounding area is a residential neighborhood with homes adjacent to the site. A well, used for potable water, is located approximately 10 feet from a drum storage area. A large amount of the stormwater run-off is uncontrolled and allowed to flow across residential properties. Public access to the site is unrestricted. TAT conducted air monitoring, photodocumentation, sampling, hazard categorization and sent 10 composite samples to a laboratory for analysis. The analytical data concluded that the contents of approximately 15 of the 57 composited drums exceeded the RCRA characteristics for hazardous waste.

<u>List of Attachments</u>

Table 1: Analytical Summary
Table 2: Composite Drum Sample Summary
Figure 1: Vicinity Map
Figure 2: Location Map
Figure 3: ODC Drum Recycling Process
Figure 4: Site Sketch
Slide Log and Slides
Unused Slides
Attachment 1: Analytical Results (103 pages)
Attachment 2: Data Validation (1 page)
Attachment 3: Quality Assurance Sampling Plan (62 pages)
Attachment 4: Hazard Categorization Results (20 pages)
Attachment 5: Texas Water Commission Files (64 pages)
Attachment 6: Chain of Custody (2 pages)
Polrep
Logbook Copies
Phone Conversation Records
Copy of TDDs

TABLE 1
ANALYTICAL SUMMARY

SAMPLE NO.	S1001	0D1002	0D1003	0D1004	0D1005	0D1006	0D1007	0D1008	0D1009	0D1010
MATRTIX	Soil	Liquid	Sludge	Sludge	Sludge	Sludge	Sludge	Sludge	Sludge	Sludge
RCRA CHARACTERISTICS/EP TOXICITY										
pH	8.7	0.5	12.5	10.8	9.2	11.9	12.0	9.4	9.8	12.1
Ignitability									$57^{\circ}C$	
Sulfide							78.0 mg/kg			
UNITS	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Mercury	0.002		0.006			0.005				
Chromium	0.63	0.08	1.63	1.65	0.61	0.95		2.71	1.09	3.67
Lead	0.43	0.17	2.60	1.60	0.52	3.40		0.30	1.54	2.29
Barium	0.2		1.40	1.00	0.20	0.10			0.40	0.70
Silver							0.02			
VOLATILE ORGANIC COMPOUNDS										
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Chloroform	11									
Ethylbenzene			36,300	29,300	20,200			11,900	30,000	20,200
Toluene	150		84,300	116,000	114,000	540	210	65,500	69,500	46,800
1,1,1, Trichloroethane			18,500		11,300					
SEMIVOLATILE ORGANIC COMPOUNDS										
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
bis (2-Ethlylhexyl) phalate								15,000		
di-n-Butylphalate								10,000		
Naphthalene		37,000	630,000	440,000	460,000			54,000	300,000	210,000
Phenanthrene	87,000									
Pyrene	26,000									

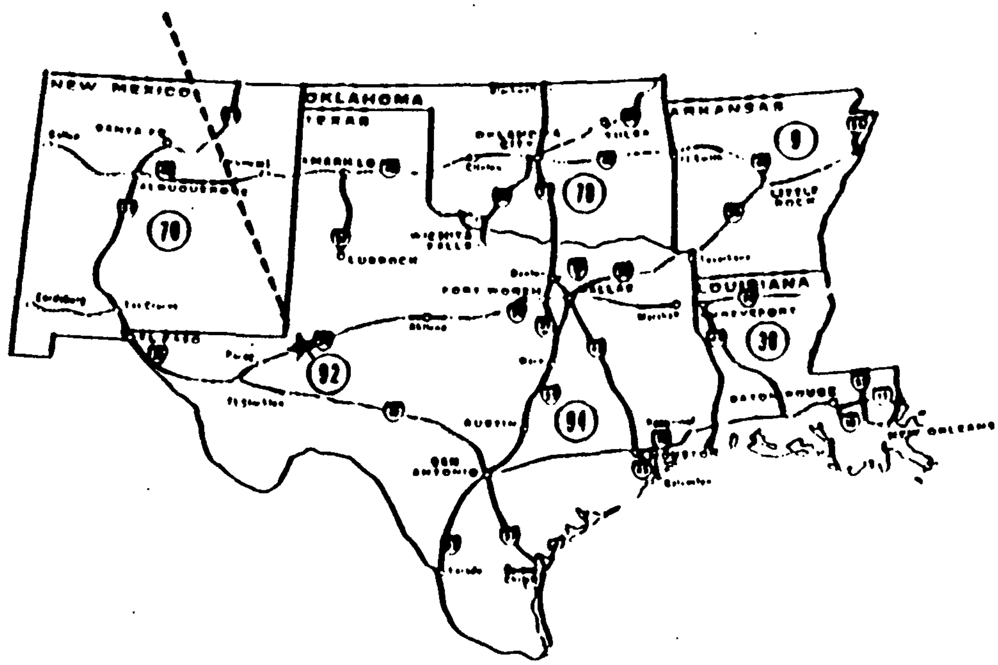
TABLE 2

COMPOSITE DRUM SAMPLE SUMMARY

Sample Number	Number of Drums	Drum Numbers
OD1002	3	45, 47, 63
OD1003	6	1, 9, 8, 16, 33, 19
OD1004	8	32, 30, 38, 39, 42, 37, 36, 35
OD1005	7	41, 40, 81, 75, 12, 7, 11
OD1006	5	29, 4, 3, 28, 27
OD1007	10	73, 74, 72, 70, 44, 62, 55, 58, 61, 56
OD1008	9	2, 5, 34, 57, 21, 25, 13, 31 24
OD1009	6	6, 14, 22, 10, 15, 23
OD1010	3	77, 78, 80

Odessa Drum Company

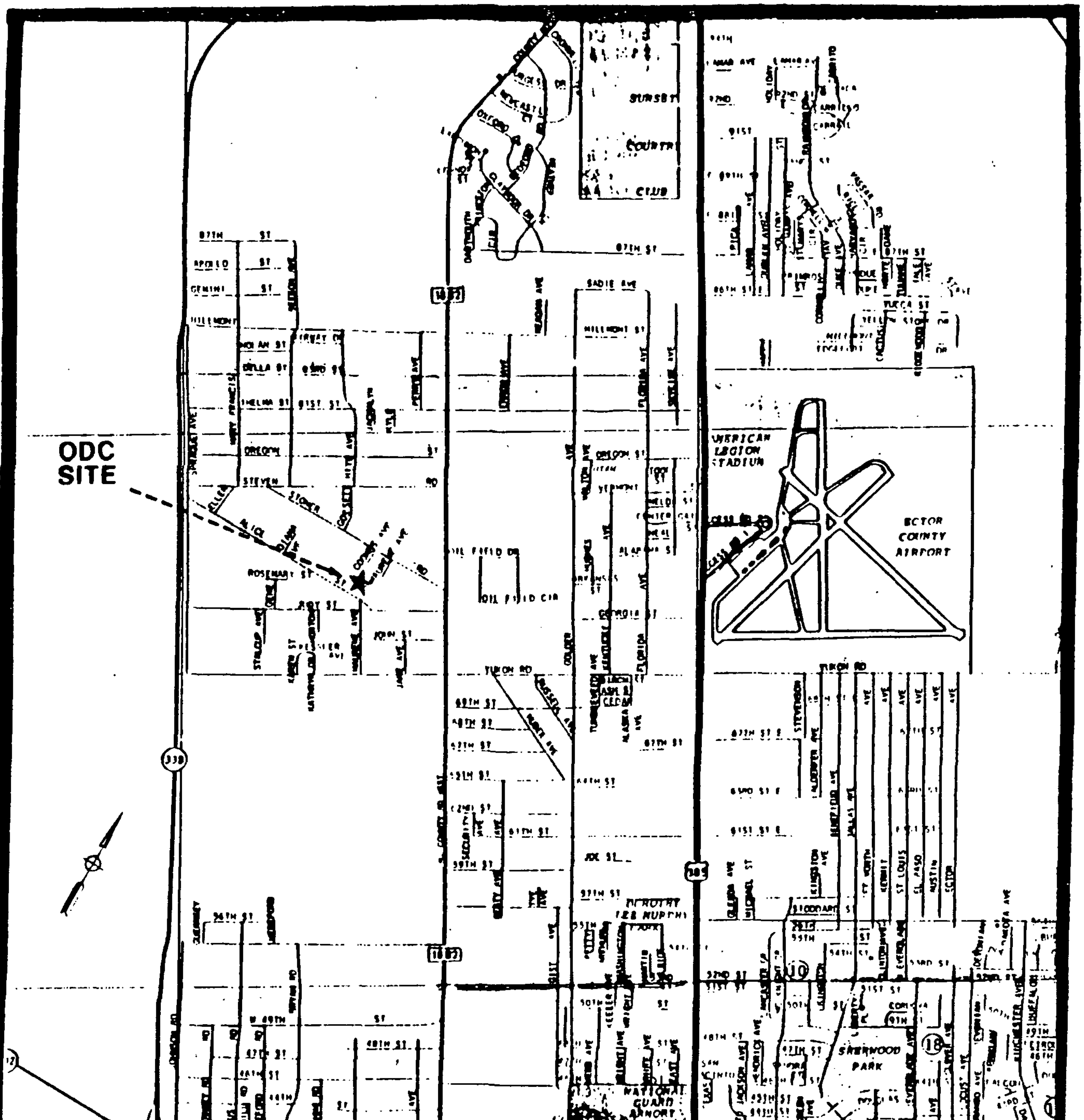
Odessa, TX



NOT TO SCALE

	Ecology and Environment, Inc. Technical Assistance Team Region VI	TXD008012284 PAN : TTX1120SAA	TDD No: 06-9004-09 Date : 07-03-90
		Originator : MARK EZELL	

Figure 1: Vicinity map showing approximate location of Odessa Drum Company Site. Odessa, Ector County, Texas



Ecology and Environment, Inc.
Technical Assistance Team
RegionVI

TXD008012254

PAN : TTX1120SAA

TDD No: 06-9004-09

Date : 07-03-90

Originator : MARK EZELL

Figure 2: Location map showing location of Odessa Drum Company Site. Odessa, Ector County, Texas

0 1650 3300

SCALE IN FEET

TDD No. 06-9004-09

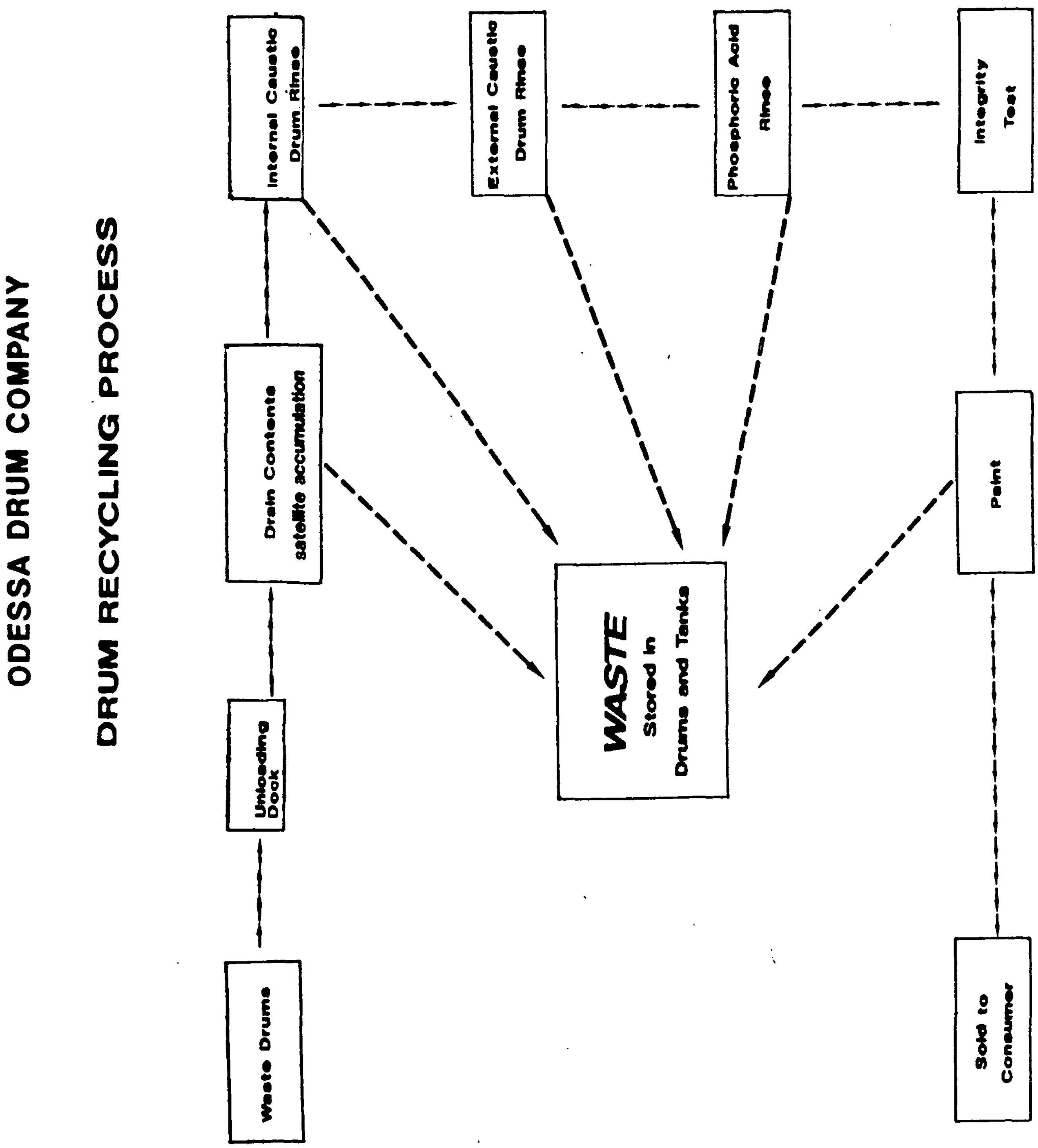


Figure 3: Odessa Drum Company Recycling Process
Odessa, Ector County, Texas

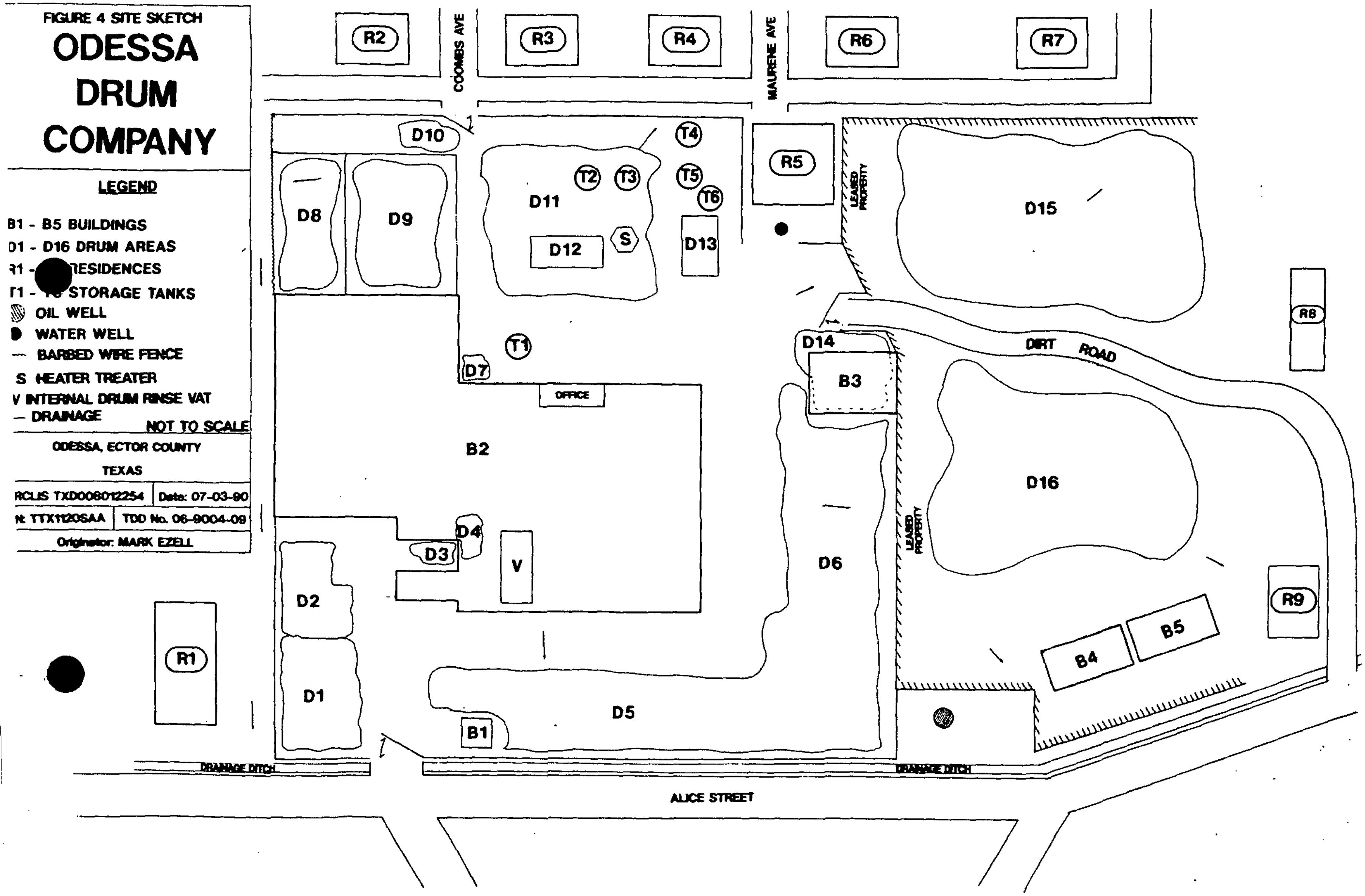


FIGURE 4 SITE SKETCH
ODESSA DRUM COMPANY
LEGEND
B1 - B5 BUILDINGS
D1 - D16 DRUM AREAS
R1 - RESIDENCES
T1 - STORAGE TANKS
OIL WELL
WATER WELL
BARBED WIRE FENCE
S HEATER TREATER
V INTERNAL DRUM RINSE VAT
DRAINAGE
NOT TO SCALE
ODESSA, ECTOR COUNTY
TEXAS
RCLIS TXD008012254
Date: 07-03-90
N: TTX1120SAA
TDD No. 06-9004-09
Originator: MARK EZELL
COOMBS AVE
MAURENE AVE
R2
R3
R4
R5
R6
R7
R8
R9
R1
D10
T4
T2
T3
T5
T6
D11
D12
S
D13
D8
D9
D15
LEASED PROPERTY
T1
D7
D14
B3
DIRT ROAD
OFFICE
B2
D16
D4
D3
V
D6
LEASED PROPERTY
D2
B5
B4
D1
D5
B1
DRAINAGE DITCH
DRAINAGE DITCH
ALICE STREET

TDD NO. 06-9004-09A

SLIDE LOG

SLIDE NUMBER	TIME/DATE	DIRECTION	ROLL #	PHOTOGRAPHER WITNESS	DESCRIPTION
1	935/4-27	N	2	ME/SP	Front of recycling building
2	935/4-27	N	2	ME/SP	Front of recycling building
3	935/4-27	N	2	ME/SP	Front of recycling building
4	936/4-27	NE	2	ME/SP	Small office building
5	940/4-27	NE	2	ME/SP	Small office building
6	1017/4-27	E	2	ME/SP	2 aboveground storage tanks
7	1015/4-27	SE	2	ME/SP	1 aboveground storage tank
8	1006/4-27	S	2	ME/SP	2 aboveground storage tanks
9	1020/4-27	N	2	ME/SP	1 aboveground storage tank
10	1520/4-24	N	1	ME/SP	Heater treater
11	1525/4-24	NW	1	ME/SP	Horizonally stacked drums
12	1525/4-24	NE	1	ME/SP	Horizonally stacked drums
13	1530/4-27	SE	2	ME/SP	Horizonally stacked drums
14	1531/4-24	NW	1	ME/SP	Horizonally stacked drums
15	1545/4-24	S	1	ME/SP	Horizonally stacked drums
16	1527/4-24	N	1	ME/SP	Horizonally stacked drums
17	1528/4-24	NW	1	ME/SP	Horizonally stacked drums
18	1018/4-27	NE	2	ME/SP	Upended drums
19	1016/4-27	N	2	ME/SP	Upended drums
20	945/4-27	W	1	ME/SP	Upended drums
21	1423/4-24	W	1	ME/SP	Hazardous Waste label
22	1439/4-24	NW	1	ME/SP	Flammable liquid label
23	1419/4-24	NW	1	ME/BM	Crushed drums
24	1419/4-24	N	1	ME/BM	Crushed drums
25	935/4-27	N	2	ME/SP	Front gate
26	1434/4-24	NE	1	ME/SP	Incomplete fence
27	1024/4-27	NE	2	ME/SP	Leased property

SLIDE LOG (continued)

28	1027/4-27	N	2	ME/SP	Leased property
29	1026/4-27	N	2	ME/SP	Leased property
30	1032/4-27	W	2	ME/SP	Leased property
31	1033/4-27	N	2	ME/SP	Leased property
32	1031/4-27	E	2	ME/SP	Neighboring trailor
33	1101/4-27	NW	2	ME/SP	Swing set located behind trailer
34	1016/4-27	N	2	ME/SP	Neighboring residence
35	1018/4-27	NE	2	ME/SP	Neighboring residence in background
36	1401/4-24	W	1	ME/BM	Toy football
37	1434/4-24	NW	1	ME/SP	Newly installed water well
38	1020/4-27	NE	2	ME/SP	Newly installed water well
39	1448/4-24	W	1	ME/SP	Leaking drum
40	1438/4-24	E	1	ME/SP	Leaking drum
41	1456/4-24	W	1	ME/SP	Drums leaking inside containment
42	1027/4-27	N	2	ME/SP	Dead and stressed vegetation
43	1450/4-24	NW	1	ME/SP	TAT air monitoring
44	1520/4-24	NE	1	ME/SP	TAT monitoring around drum bung
45	1202/4-25	E	1	ME/SP	TAT monitoring headspace in drum
46	1154/4-25	NW	1	ME/SP	TAT sampling drum
47	1540/4-26	N	2	ME/SP	TATs HAZCATing
48	1541/4-26	E	2	ME/SP	TATs HAZCATing

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

ODESSA DRUM COMPANY ADMINISTRATIVE RECORD

NOTE:

ACTUAL SLIDES IN THE SITE ASSESSMENT REPORT PRODUCED BY THE TECHNICAL ASSISTANCE TEAM DID NOT REPRODUCE AND THEREFORE WERE NOT INCLUDED IN THE ADMINISTRATIVE RECORD FILE. A LISTING OF THE SLIDES WAS INCLUDED IN THE SITE ASSESSMENT REPORT.

Jo Ann Woods

JO ANN WOODS
ADMINISTRATIVE RECORD COORDINATOR

TDD No. 06-9004-09

#2

ATTACHMENT 1

ANALYTICAL RESULTS

(103 pages)

NDRC LABORATORIES, INC.

Dallas - 1101 Commerce Drive • Richardson, Texas 75081 • (214) 238-5591 • Fax (214) 238-5592
Houston - 6284 Brookhill Drive • Houston, Texas 77087 • (713) 644-9437 • Fax (713) 644-9160

NDRC LABORATORIES, INC
QUANTITATION REPORT

EPA PRIORITY POLLUTANT ANALYSES

ANALYTICAL METHODS USED:

EPA 1310 EPTOX METALS

EPA 150.1 PH

EPA 1010 FLASHPOINT

EPA SECTION 7/335.2 REACTIVE CYANIDE

EPA SECTION 7/9030 REACTIVE SULFIDE

EPA 8240 PURGEABLES

EPA 8270 BASE/NEUTRAL - ACID EXTRACTABLES

EPA 8080 PESTICIDES

COMMENTS: These samples were originally extracted on May-04-90 for BNA and Pesticides, due to low levels for pesticides, these samples were re-extracted on May-10-90 at higher concentrations.

NDRC LABORATORIES, INC.

Dallas - 1101 Commerce Drive • Richardson, Texas 75081 • (214) 238-5591 • Fax (214) 238-5592
Houston - 6284 Brookhill Drive • Houston, Texas 77087 • (713) 644-9437 • Fax (713) 644-9160

DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11137
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SOIL
ID MARKS: S1001 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability			>	212	°F
pH				8.7	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

NDRC Laboratories, Inc. David R. Godwin
David R. Godwin, Ph.D.
Chief Executive Officer

NDRC LABORATORIES, INC.

Dallas - 1101 Commerce Drive • Richardson, Texas 75081 • (214) 238-5591 • Fax (214) 238-5592
Houston - 6284 Brookhill Drive • Houston, Texas 77087 • (713) 644-9437 • Fax (713) 644-9160

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ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SOIL
ID MARKS: S1001 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L	<	0.10	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L	<	0.05	mg/L
Mercury	0.001	mg/L		0.002	mg/L
Lead	0.02	mg/L	<	0.02	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

NDRC Laboratories, Inc. [signature]
David R. Godwin, Ph.D.
Chief Executive Officer

NDRC LABORATORIES, INC.

Dallas - 1101 Commerce Drive • Richardson, Texas 75081 • (214) 238-5591 • Fax (214) 238-5592
Houston - 6284 Brookhill Drive • Houston, Texas 77087 • (713) 644-9437 • Fax (713) 644-9160

DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11137 MS
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SOIL
ID MARKS: S1001 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS	
EP TOXICITY METALS:				
Silver	0.01	mg/L	1.05	mg/L
Arsenic	0.05	mg/L	1.12	mg/L
Barium	0.10	mg/L	1.04	mg/L
Cadmium	0.01	mg/L	0.94	mg/L
Chromium	0.05	mg/L	0.99	mg/L
Mercury	0.001	mg/L	0.055	mg/L
Lead	0.02	mg/L	1.01	mg/L
Selenium	0.05	mg/L	1.08	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11137 MSD
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SOIL
ID MARKS: S1001 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS	
EP TOXICITY METALS:				
Silver	0.01	mg/L	1.04	mg/L
Arsenic	0.05	mg/L	1.35	mg/L
Barium	0.10	mg/L	1.20	mg/L
Cadmium	0.01	mg/L	0.93	mg/L
Chromium	0.05	mg/L	0.99	mg/L
Mercury	0.001	mg/L	0.057	mg/L
Lead	0.02	mg/L	0.97	mg/L
Selenium	0.05	mg/L	1.30	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11138
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: LIQUID
ID MARKS: OD1002 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.5	mg/L	<	0.5	mg/L
Ignitability			>	212	°F
pH				0.5	
Sulfide, Reactive	5	mg/L	<	5	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11138
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: LIQUID
ID MARKS: OD1002 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L	<	0.10	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L		0.08	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L		0.17	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11139
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1008 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability			>	212	°F
pH				9.4	
Sulfide, Reactive	5	mg/Kg		78	mg/Kg

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11139
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1008 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L	<	0.10	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L		2.71	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L		0.30	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11140
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1009 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability				135	°F
pH				9.8	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11140
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1009 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L		0.40	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L		1.09	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L		1.54	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11141
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1003 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability			>	212	°F
pH				12.5	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11141
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1003 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L		1.40	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L		1.63	mg/L
Mercury	0.001	mg/L		0.006	mg/L
Lead	0.02	mg/L		2.60	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11142
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1004 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability			>	212	°F
pH				10.8	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11142
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1004 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L		1.00	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L		1.65	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L		1.60	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11143
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1005 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability			>	212	°F
pH				9.2	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

NDRC Laboratories, Inc. David R. Godwin
David R. Godwin, Ph.D.
Chief Executive Officer

REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1005 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L		0.20	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L		0.61	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L		0.52	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11144
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1006 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability			>	212	°F
pH				11.9	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11145
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1007 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	0.50	mg/Kg	<	0.50	mg/Kg
Ignitability			>	212	°F
pH				12.0	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11145
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1007 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EP TOXICITY METALS:					
Silver	0.01	mg/L		0.02	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L	<	0.10	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L	<	0.05	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L	<	0.02	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11146
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1010 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Cyanide, Reactive	5.00	mg/Kg	<	5.00	mg/Kg
Ignitability			>	212	°F
pH				12.1	
Sulfide, Reactive	5	mg/Kg	<	5	mg/Kg

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DATE RECEIVED: 30-APR-1990

REPORT NUMBER: D90-11146
REPORT DATE: 17-MAY-1990

SAMPLE SUBMITTED BY: Ecology and Environment, Inc.
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE MATRIX: SLUDGE
ID MARKS: OD1010 Project TFA-K
Odessa Drum Site

TEST REQUESTED	DETECTION LIMIT		RESULTS		
EP TOXICITY METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.10	mg/L		0.70	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L		3.67	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L		2.29	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90 REPORT NUMBER: 90-11137
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Soil
IDENTIFYING MARKS: S1001 Project TFA-K
Odessa Drum Site

NDRC LABORATORIES, INC.

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Report 90-11137

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acrolein............................	20	.....	< 20
Acrylonitrile........................	20	.....	< 20
Benzene.............................	10	.....	< 10
Bromoform...........................	10	.....	< 10
Bromomethane........................	20	.....	< 20
Carbon tetrachloride................	10	.....	< 10
Chlorobenzene.......................	10	.....	< 10
Chlorodibromomethane................	10	.....	< 10
2-Chloroethylvinyl ether............	10	.....	< 10
Chloroethane........................	20	.....	< 20
Chloroform..........................	10	.....	11
Chloromethane.......................	20	.....	< 20
Dichlorobromomethane................	10	.....	< 10
1,2-Dichlorobenzene.................	10	.....	< 10
1,3-Dichlorobenzene.................	10	.....	< 10
1,4-Dichlorobenzene.................	10	.....	< 10
1,1-Dichloroethane..................	10	.....	< 10
1,2-Dichloroethane..................	10	.....	< 10
1,1-Dichloroethene..................	10	.....	< 10
trans-1,2-Dichloroethene............	10	.....	< 10
1,2-Dichloropropane.................	10	.....	< 10
cis-1,3-Dichloropropene.............	10	.....	< 10
trans-1,3-Dichloropropene...........	10	.....	< 10
Ethylbenzene........................	10	.....	< 10
Methylene chloride..................	20	.....	< 20
1,1,2,2-Tetrachloroethane...........	10	.....	< 10
Tetrachloroethene...................	10	.....	< 10
Toluene.............................	10	.....	150
1,1,1-Trichloroethane...............	10	.....	< 10
1,1,2-Trichloroethane...............	10	.....	< 10
Trichloroethene.....................	10	.....	< 10
Trichlorofluoromethane..............	20	.....	< 20
Vinyl chloride......................	20	.....	< 20

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
Acenaphthene	660	< 660
Acenaphthylene	660	< 660
Anthracene	660	< 660
Benzidine	660	< 660
Benzo(a)anthracene	660	< 660
Benzo(b)fluoranthene	660	< 660
Benzo(k)fluoranthene	660	< 660
Benzo(a)pyrene	660	< 660
Benzo(ghi)perylene	660	< 660
Butyl benzyl phthalate	660	< 660
4-Bromophenyl phenyl ether	660	< 660
bis(2-Chloroethyl)ether	660	< 660
bis(2-Chloroethoxy)methane	660	< 660
bis(2-Ethylhexyl)phthalate	660	< 660
bis(2-Chloroisopropyl)ether	660	< 660
2-Chloronaphthalene	660	< 660
4-Chlorophenyl phenyl ether	660	< 660
Chrysene	660	< 660
Dibenzo(a,h)anthracene	660	< 660
di-n-Butylphthalate	660	< 660
1,2-Dichlorobenzene	660	< 660
1,3-Dichlorobenzene	660	< 660
1,4-Dichlorobenzene	660	< 660
3,3'-Dichlorobenzidine	1300	<1300
Diethylphthalate	660	< 660
Dimethylphthalate	660	< 660
2,4-Dinitrotoluene	660	< 660
2,6-Dinitrololuene	660	< 660
Di-n-Octylphthalate	660	< 660
Fluoranthene	660	< 660
Fluorene	660	< 660
Hexachlorobenzene	660	< 660
Hexachlorobutadiene	660	< 660

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Report 90-11137

BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	660	.....	< 660
Hexachloroethane....................	660	.....	< 660
Indeno(1,2,3-cd)pyrene..............	660	.....	< 660
Isophorone..........................	660	.....	< 660
Naphthalene.........................	660	.....	< 660
Nitrobenzene........................	660	.....	< 660
N-Nitrosodimethylamine..............	660	.....	< 660
N-Nitrosodiphenylamine..............	660	.....	< 660
N-Nitrosodi-n-propylamine...........	660	.....	< 660
Phenanthrene........................	660	.....	87000
Pyrene..............................	660	.....	26000
1,2,4-Trichlorobenzene..............	660	.....	< 660

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
4-Chloro-3-methylphenol	6600	< 6600
2-Chlorophenol	6600	< 6600
2,4-Dichlorophenol	6600	< 6600
2,4-Dimethylphenol	6600	< 6600
2,4-Dinitrophenol	6600	< 6600
2-Methyl-4,6-dinitrophenol	6600	< 6600
2-Nitrophenol	6600	< 6600
4-Nitrophenol	33000	< 33000
Pentachlorophenol	33000	< 33000
Phenol	6600	< 6600
2,4,6-Trichlorophenol	6600	< 6600

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories
Project:
Sample Number: 11137
Matrix: Soil
Instrument ID: A
Date Received: 04-30-90
Level: low
Date Extracted: 05-04-90
Column: SP2100
Date Analyzed: 05-15-90
pH: 8.7
Dilution: 50

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	400	U
319-85-7	beta-BHC	400	U
319-86-8	delta-BHC	400	U
58-89-9	gamma-BHC(Lindane)	400	U
76-44-8	Heptachlor	400	U
309-00-2	Aldrin	400	U
1024-57-3	Heptachlor epoxide	400	U
959-98-8	Endosulfan I	400	U
60-57-1	Dieldrin	800	U
72-55-9	4,4'-DDE	800	U
72-20-8	Endrin	800	U
33213-65-9	Endosulfan II	800	U
72-54-8	4,4'-DDD	800	U
1031-07-8	Endosulfan sulfate	800	U
50-29-3	4,4'-DDT	800	U
72-43-5	Methoxychlor	4000	U
53494-70-5	Endrin ketone	800	U
5103-71-9	alpha-Chlordane	4000	U
5103-74-2	gamma-Chlordane	4000	U
8001-35-2	Toxaphene	8000	U
12674-11-2	Arochlor-1016	4000	U
11104-28-2	Arochlor-1221	4000	U
11141-16-5	Arochlor-1232	4000	U
53469-21-9	Arochlor-1242	4000	U
12672-29-6	Arochlor-1248	4000	U
11097-69-1	Arochlor-1254	4000	U
11096-82-5	Arochlor-1260	4000	U

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Report D90-11137

Tentatively Identified Compounds

	Compound	Fraction	Amount ($\mu g/kg$)
1.	1,7-Dimethyl Naphthalene	ABN	21,000
2.	1,4-Dimethyl Naphthalene	ABN	25,000
3.	1,4,6-Trimethyl Naphthalene	ABN	33,000
4.	1,6,7-Trimethyl Naphthalene	ABN	26,000
5.	1,4,5-Trimethyl Naphthalene	ABN	21,000
6.	Unidentified Aromatic Hydrocarbon	ABN	27,000
7.	Hexadecane	ABN	31,000
8.	1-Phenyl-1H-Indene	ABN	15,000
9.	4-Methyl Phenanthrene	ABN	8,000
10.	2,3-Dimethyl Phenanthrene	ABN	8,500
11.	Unidentified Aromatic Hydrocarbon #2	ABN	28,000
12.	Xylenes	VOA	33
13.	Unidentified Saturated Hydrocarbon	VOA	24
14.	Unidentified Alkane	VOA	140
15.	Bis-Methylethyl Benzene #1	VOA	310
16.	Bis-Methylethyl Benzene #2	VOA	160
17.	Bis-Methylethyl Benzene #3	VOA	390
18.	Methyl Pentyl Benzene	VOA	87
19.	Trimethyl Dodecane	VOA	21
20.	Methyl Naphthalene	VOA	41

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-111138
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Liquid
IDENTIFYING MARKS: OD1002 Project TFA-K
Odessa Drum Site

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Report 90-111138

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(μg/L)		AMOUNT DETECTED(μg/L)
Acrolein	1000	.....	< 1000
Acrylonitrile	1000	.....	< 1000
Benzene	500	.....	< 500
Bromoform	500	.....	< 500
Bromomethane	1000	.....	< 1000
Carbon tetrachloride	500	.....	< 500
Chlorobenzene	500	.....	< 500
Chlorodibromomethane	500	.....	< 500
2-Chloroethylvinyl ether	500	.....	< 500
Chloroethane	1000	.....	< 1000
Chloroform	500	.....	< 500
Chloromethane	1000	.....	< 1000
Dichlorobromomethane	500	.....	< 500
1,2-Dichlorobenzene	500	.....	< 500
1,3-Dichlorobenzene	500	.....	< 500
1,4-Dichlorobenzene	500	.....	< 500
1,1-Dichloroethane	500	.....	< 500
1,2-Dichloroethane	500	.....	< 500
1,1-Dichloroethene	500	.....	< 500
trans-1,2-Dichloroethene	500	.....	< 500
1,2-Dichloropropane	500	.....	< 500
cis-1,3-Dichloropropene	500	.....	< 500
trans-1,3-Dichloropropene	500	.....	< 500
Ethylbenzene	500	.....	< 500
Methylene chloride	1000	.....	< 1000
1,1,2,2-Tetrachloroethane	500	.....	< 500
Tetrachloroethene	500	.....	< 500
Toluene	500	.....	< 500
1,1,1-Trichloroethane	500	.....	< 500
1,1,2-Trichloroethane	500	.....	< 500
Trichloroethene	500	.....	< 500
Trichlorofluoromethane	1000	.....	< 1000
Vinyl chloride	1000	.....	< 1000

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT($\mu g/L$)	AMOUNT DETECTED($\mu g/L$)
Acenaphthene	2000	< 2000
Acenaphthylene	2000	< 2000
Anthracene	2000	< 2000
Benzidine	2000	< 2000
Benzo(a)anthracene	2000	< 2000
Benzo(b)fluoranthene	2000	< 2000
Benzo(k)fluoranthene	2000	< 2000
Benzo(a)pyrene	2000	< 2000
Benzo(ghi)perylene	2000	< 2000
Butyl benzyl phthalate	2000	< 2000
4-Bromophenyl phenyl ether	2000	< 2000
bis(2-Chloroethyl)ether	2000	< 2000
bis(2-Chloroethoxy)methane	2000	< 2000
bis(2-Ethylhexyl)phthalate	2000	< 2000
bis(2-Chloroisopropyl)ether	2000	< 2000
2-Chloronaphthalene	2000	< 2000
4-Chlorophenyl phenyl ether	2000	< 2000
Chrysene	2000	< 2000
Dibenzo(a,h)anthracene	2000	< 2000
di-n-Butylphthalate	2000	< 2000
1,2-Dichlorobenzene	2000	< 2000
1,3-Dichlorobenzene	2000	< 2000
1,4-Dichlorobenzene	2000	< 2000
3,3'-Dichlorobenzidine	4000	< 4000
Diethylphthalate	2000	< 2000
Dimethylphthalate	2000	< 2000
2,4-Dinitrotoluene	2000	< 2000
2,6-Dinitrololuene	2000	< 2000
Di-n-Octylphthalate	2000	< 2000
Fluoranthene	2000	< 2000
Fluorene	2000	< 2000
Hexachlorobenzene	2000	< 2000
Hexachlorobutadiene	2000	< 2000

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene	2000	< 2000
Hexachloroethane	2000	< 2000
Indeno(1,2,3-cd)pyrene	2000	< 2000
Isophorone	2000	< 2000
Naphthalene	2000	37000
Nitrobenzene	2000	< 2000
N-Nitrosodimethylamine	2000	< 2000
N-Nitrosodiphenylamine	2000	< 2000
N-Nitrosodi-n-propylamine	2000	< 2000
Phenanthrene	2000	< 2000
Pyrene	2000	< 2000
1,2,4-Trichlorobenzene	2000	< 2000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/L)		AMOUNT DETECTED(µg/L)
4-Chloro-3-methylphenol.............	4000	......	< 4000
2-Chlorophenol......................	4000	......	< 4000
2,4-Dichlorophenol..................	4000	......	< 4000
2,4-Dimethylphenol..................	4000	......	< 4000
2,4-Dinitrophenol...................	4000	......	< 4000
2-Methyl-4,6-dinitrophenol..........	4000	......	< 4000
2-Nitrophenol.......................	4000	......	< 4000
4-Nitrophenol.......................	10000	......	< 10000
Pentachlorophenol...................	10000	......	< 10000
Phenol..............................	4000	......	< 4000
2,4,6-Trichlorophenol...............	4000	......	< 4000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories Project:
Sample Number: 11138 Matrix: LIQUID
Instrument ID: A Date Received: 04-30-90
Level: low Date Extracted: 05-02-90
Column: SP2100 Date Analyzed: 05-15-90
pH: 0.5 Dilution: 100

CAS #	COMPOUND	CONCENTRATION(ug/L)	Q
319-84-6	alpha-BHC	5.0	U
319-85-7	beta-BHC	5.0	U
319-86-8	delta-BHC	5.0	U
58-89-9	gamma-BHC(Lindane)	5.0	U
76-44-8	Heptachlor	5.0	U
309-00-2	Aldrin	5.0	U
1024-57-3	Heptachlor epoxide	5.0	U
959-98-8	Endosulfan I	5.0	U
60-57-1	Dieldrin	10.0	U
72-55-9	4,4'-DDE	10.0	U
72-20-8	Endrin	10.0	U
33213-65-9	Endosulfan II	10.0	U
72-54-8	4,4'-DDD	10.0	U
1031-07-8	Endosulfan sulfate	10.0	U
50-29-3	4,4'-DDT	10.0	U
72-43-5	Methoxychlor	50.0	U
53494-70-5	Endrin ketone	10.0	U
5103-71-9	alpha-Chlordane	50.00	U
5103-74-2	gamma-Chlordane	50.00	U
10.01-35-2	Toxaphene	100.00	U
12674-11-2	Arochlor-1016	50.00	U
11104-28-2	Arochlor-1221	50.00	U
11141-16-5	Arochlor-1232	50.00	U
53469-21-9	Arochlor-1242	50.00	U
12672-29-6	Arochlor-1248	50.00	U
11097-69-1	Arochlor-1254	50.00	U
11096-82-5	Arochlor-1260	50.00	U

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Report D90-11138

Tentatively Identified Compounds

Compound		Fraction	Amount(μg/L)
1.	2-Methyl Naphthalene	ABN	5,500
2.	1-Methyl-3-Propyl Benzene	ABN	18,000
3.	Butyl Benzene	ABN	13,000
4.	1-Ethyl 2,4-Dimethyl Benzene	ABN	17,000
5.	1-Methyl-3-Isopropyl Benzene	ABN	28,000
6.	1,2,3,4-Tetramethyl Benzene	ABN	52,000
7.	1-Methyl-2-Isopropyl Benzene	ABN	30,000
8.	5-Methyl-2,3-Dihydro(1H)Indene	ABN	24,000
9.	Ethylpropyl Benzene	ABN	20,000
10.	4-Methyl-2,3-Dihydro(1H)Indene	ABN	22,000
11.	Unidentified Aromatic Hydrocarbon	ABN	18,000
12.	2-Isopropyl-1,4-Dimethyl Benzene	ABN	22,000
13.	1-Decanol	ABN	120,000
14.	1-Tetradecanol	ABN	3,600
15.	Unidentified Aliphatic Alcohol	ABN	15,000
16.	Hexadecanol	ABN	74,000
17.	1-Octadecanol	ABN	86,000
18.	Unidentified Cyclic Hydrocarbon	ABN	34,000
19.	Unidentified Cyclic Hydrocarbon #2	ABN	16,000
20.	Unidentified Cyclic Hydrocarbon #3	ABN	24,000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories
Project:
Sample Number: 11138
Matrix: LIQUID
Instrument ID: A
Date Received: 04-30-90
Level: low
Date Extracted: 05-02-90
Column: SP2100
Date Analyzed: 05-15-90
pH: 0.5
Dilution: 100

CAS #	COMPOUND	CONCENTRATION(ug/L)	Q
319-84-6	alpha-BHC	5.0	U
319-85-7	beta-BHC	5.0	U
319-86-8	delta-BHC	5.0	U
58-89-9	gamma-BHC(Lindane)	5.0	U
76-44-8	Heptachlor	5.0	U
309-00-2	Aldrin	5.0	U
1024-57-3	Heptachlor epoxide	5.0	U
959-98-8	Endosulfan I	5.0	U
60-57-1	Dieldrin	10.0	U
72-55-9	4,4'-DDE	10.0	U
72-20-8	Endrin	10.0	U
33213-65-9	Endosulfan II	10.0	U
72-54-8	4,4'-DDD	10.0	U
1031-07-8	Endosulfan sulfate	10.0	U
50-29-3	4,4'-DDT	10.0	U
72-43-5	Methoxychlor	50.0	U
53494-70-5	Endrin ketone	10.0	U
5103-71-9	alpha-Chlordane	50.00	U
5103-74-2	gamma-Chlordane	50.00	U
10.01-35-2	Toxaphene	100.00	U
12674-11-2	Arochlor-1016	50.00	U
11104-28-2	Arochlor-1221	50.00	U
11141-16-5	Arochlor-1232	50.00	U
53469-21-9	Arochlor-1242	50.00	U
12672-29-6	Arochlor-1248	50.00	U
11097-69-1	Arochlor-1254	50.00	U
11096-82-5	Arochlor-1260	50.00	U

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Report D90-11138

Tentatively Identified Compounds

	Compound	Fraction	Amount(μg/L)
1.	2-Methyl Naphthalene	ABN	5,500
2.	1-Methyl-3-Propyl Benzene	ABN	18,000
3.	Butyl Benzene	ABN	13,000
4.	1-Ethyl 2,4-Dimethyl Benzene	ABN	17,000
5.	1-Methyl-3-Isopropyl Benzene	ABN	28,000
6.	1,2,3,4-Tetramethyl Benzene	ABN	52,000
7.	1-Methyl-2-Isopropyl Benzene	ABN	30,000
8.	5-Methyl-2,3-Dihydro(1H)Indene	ABN	24,000
9.	Ethylpropyl Benzene	ABN	20,000
10.	4-Methyl-2,3-Dihydro(1H)Indene	ABN	22,000
11.	Unidentified Aromatic Hydrocarbon	ABN	18,000
12.	2-Isopropyl-1,4-Dimethyl Benzene	ABN	22,000
13.	1-Decanol	ABN	120,000
14.	1-Tetradecanol	ABN	3,600
15.	Unidentified Aliphatic Alcohol	ABN	15,000
16.	Hexadecanol	ABN	74,000
17.	1-Octadecanol	ABN	86,000
18.	Unidentified Cyclic Hydrocarbon	ABN	34,000
19.	Unidentified Cyclic Hydrocarbon #2	ABN	16,000
20.	Unidentified Cyclic Hydrocarbon #3	ABN	24,000

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Tentatively Identified Compounds

Compound		Fraction	Amount(µg/L)
21.	Unidentified Cyclic Hydrocarbon #4	ABN	14,000
22.	Diethyl Benzene	VOA	17,000
23.	Dimethyl Ethyl Benzene #1	VOA	26,000
24.	Dimethyl Ethyl Benzene #2	VOA	32,000
25.	Dimethyl Ethyl Benzene #3	VOA	33,000
26.	Tetramethyl Benzene #1	VOA	33,000
27.	Tetramethyl Benzene #2	VOA	35,000
28.	Dimethyl Ethyl Benzene #4	VOA	15,000
29.	Dihydro Methyl Indene	VOA	23,000
30.	Ethyl Trimethyl Benzene	VOA	15,000
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-11139
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1008 Project TFA-K
Odessa Drum Site

NDRC LABORATORIES, INC.

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Report 90-11139

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(μg/kg)		AMOUNT DETECTED(μg/kg)
Acrolein	10000	.....	< 10000
Acrylonitrile	10000	.....	< 10000
Benzene	5000	.....	< 5000
Bromoform	5000	.....	< 5000
Bromomethane	10000	.....	< 10000
Carbon tetrachloride	5000	.....	< 5000
Chlorobenzene	5000	.....	< 5000
Chlorodibromomethane	5000	.....	< 5000
2-Chloroethylvinyl ether	5000	.....	< 5000
Chloroethane	10000	.....	< 10000
Chloroform	5000	.....	< 5000
Chloromethane	10000	.....	< 10000
Dichlorobromomethane	5000	.....	< 5000
1,2-Dichlorobenzene	5000	.....	< 5000
1,3-Dichlorobenzene	5000	.....	< 5000
1,4-Dichlorobenzene	5000	.....	< 5000
1,1-Dichloroethane	5000	.....	< 5000
1,2-Dichloroethane	5000	.....	< 5000
1,1-Dichloroethene	5000	.....	< 5000
trans-1,2-Dichloroethene	5000	.....	< 5000
1,2-Dichloropropane	5000	.....	< 5000
cis-1,3-Dichloropropene	5000	.....	< 5000
trans-1,3-Dichloropropene	5000	.....	< 5000
Ethylbenzene	5000	.....	11900
Methylene chloride	10000	.....	< 10000
1,1,2,2-Tetrachloroethane	5000	.....	< 5000
Tetrachloroethene	5000	.....	< 5000
Toluene	5000	.....	65600
1,1,1-Trichloroethane	5000	.....	< 5000
1,1,2-Trichloroethane	5000	.....	< 5000
Trichloroethene	5000	.....	< 5000
Trichlorofluoromethane	10000	.....	< 10000
Vinyl chloride	10000	.....	< 10000

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(μg/kg)	AMOUNT DETECTED(μg/kg)
Acenaphthene	9900	< 9900
Acenaphthylene	9900	< 9900
Anthracene	9900	< 9900
Benzidine	9900	< 9900
Benzo(a)anthracene	9900	< 9900
Benzo(b)fluoranthene	9900	< 9900
Benzo(k)fluoranthene	9900	< 9900
Benzo(a)pyrene	9900	< 9900
Benzo(ghi)perylene	9900	< 9900
Butyl benzyl phthalate	9900	< 9900
4-Bromophenyl phenyl ether	9900	< 9900
bis(2-Chloroethyl)ether	9900	< 9900
bis(2-Chloroethoxy)methane	9900	< 9900
bis(2-Ethylhexyl)phthalate	9900	15000
bis(2-Chloroisopropyl)ether	9900	< 9900
2-Chloronaphthalene	9900	< 9900
4-Chlorophenyl phenyl ether	9900	< 9900
Chrysene	9900	< 9900
Dibenzo(a,h)anthracene	9900	< 9900
di-n-Butylphthalate	9900	10000
1,2-Dichlorobenzene	9900	< 9900
1,3-Dichlorobenzene	9900	< 9900
1,4-Dichlorobenzene	9900	< 9900
3,3'-Dichlorobenzidine	19500	<19500
Diethylphthalate	9900	< 9900
Dimethylphthalate	9900	< 9900
2,4-Dinitrotoluene	9900	< 9900
2,6-Dinitrololuene	9900	< 9900
Di-n-Octylphthalate	9900	< 9900
Fluoranthene	9900	< 9900
Fluorene	9900	< 9900
Hexachlorobenzene	9900	< 9900
Hexachlorobutadiene	9900	< 9900

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene	9900	.....	< 9900
Hexachloroethane	9900	.....	< 9900
Indeno(1,2,3-cd)pyrene	9900	.....	< 9900
Isophorone	9900	.....	< 9900
Naphthalene	9900	.....	54000
Nitrobenzene	9900	.....	< 9900
N-Nitrosodimethylamine	9900	.....	< 9900
N-Nitrosodiphenylamine	9900	.....	< 9900
N-Nitrosodi-n-propylamine	9900	.....	< 9900
Phenanthrene	9900	.....	< 9900
Pyrene	9900	.....	< 9900
1,2,4-Trichlorobenzene	9900	.....	< 9900

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(μg/kg)	AMOUNT DETECTED(μg/kg)
4-Chloro-3-methylphenol	99000	< 99000
2-Chlorophenol	99000	< 99000
2,4-Dichlorophenol	99000	< 99000
2,4-Dimethylphenol	99000	< 99000
2,4-Dinitrophenol	49500	< 49500
2-Methyl-4,6-dinitrophenol	99000	< 99000
2-Nitrophenol	99000	< 99000
4-Nitrophenol	49500	< 49500
Pentachlorophenol	49500	< 49500
Phenol	99000	< 99000
2,4,6-Trichlorophenol	99000	< 99000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(μg/kg)	AMOUNT DETECTED(μg/kg)
4-Chloro-3-methylphenol	99000	< 99000
2-Chlorophenol	99000	< 99000
2,4-Dichlorophenol	99000	< 99000
2,4-Dimethylphenol	99000	< 99000
2,4-Dinitrophenol	49500	< 49500
2-Methyl-4,6-dinitrophenol	99000	< 99000
2-Nitrophenol	99000	< 99000
4-Nitrophenol	49500	< 49500
Pentachlorophenol	49500	< 49500
Phenol	99000	< 99000
2,4,6-Trichlorophenol	99000	< 99000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories   Project: ____
Sample Number: 11139   Matrix: Sludge
Instrument ID: A   Date Received: 04-30-90
Level: low   Date Extracted: 05-04-90
Column: SP2100   Date Analyzed: 05-15-90
pH: 9.4   Dilution: 10

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	80	U
319-85-7	beta-BHC	80	U
319-86-8	delta-BHC	80	U
58-89-9	gamma-BHC(Lindane)	80	U
76-44-8	Heptachlor	80	U
309-00-2	Aldrin	80	U
1024-57-3	Heptachlor epoxide	80	U
959-98-8	Endosulfan I	80	U
60-57-1	Dieldrin	160	U
72-55-9	4,4'-DDE	160	U
72-20-8	Endrin	160	U
33213-65-9	Endosulfan II	160	U
72-54-8	4,4'-DDD	160	U
1031-07-8	Endosulfan sulfate	160	U
50-29-3	4,4'-DDT	160	U
72-43-5	Methoxychlor	800	U
53494-70-5	Endrin ketone	160	U
5103-71-9	alpha-Chlordane	800	U
5103-74-2	gamma-Chlordane	800	U
1601-35-2	Toxaphene	1600	U
12674-11-2	Arochlor-1016	800	U
11104-28-2	Arochlor-1221	800	U
11141-16-5	Arochlor-1232	800	U
53469-21-9	Arochlor-1242	800	U
12672-29-6	Arochlor-1248	800	U
11097-69-1	Arochlor-1254	800	U
11096-82-5	Arochlor-1260	800	U

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Report D90-11139

Tentatively Identified Compounds

Compound		Fraction	Amount(μg/kg)
1.	2-Methyl Naphthalene	ABN	72,000
2.	Propyl Benzene	ABN	69,000
3.	1-Ethyl-2-Methyl Benzene	ABN	270,000
4.	1,3,5-Trimethyl Benzene	ABN	82,000
5.	1-Ethyl-3-Methyl Benzene	ABN	110,000
6.	1,2,4-Trimethyl Benzene	ABN	200,000
7.	1-Ethyl-4-Methyl Benzene	ABN	79,000
8.	1,2,3,4-Tetramethyl Benzene	ABN	37,000
9.	1,2,4,5-Tetramethyl Benzene	ABN	41,000
10.	2-Ethyl-1,4-Dimethyl Benzene	ABN	57,000
11.	2-Isopropyl-1,4-Dimethyl Benzene	ABN	35,000
12.	Unidentified Aromatic Amine	ABN	620,000
13.	2,7-Dimethyl Naphthalene	ABN	270,000
14.	1,1-Ethylidine Bis Benzene	ABN	150,000
15.	Unidentified Aliphatic Amine	ABN	220,000
16.	Unidentified Aliphatic Amine #2	ABN	27,000
17.	Unidentified Cyclic Amine	ABN	50,000
18.	Unidentified Aliphatic Amine #3	ABN	270,000
19.	Unidentified Aliphatic Amine #4	ABN	100,000
20.	Unidentified Cyclic Hydrocarbon #2	ABN	130,000

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Tentatively Identified Compounds

Compound		Fraction	Amount(µg/kg)
21.	Xylenes	VOA	130,000
22.	Propyl Benzene	VOA	41,000
23.	An Ethyl Methyl Benzene #1	VOA	240,000
24.	An Ethyl Methyl Benzene #2	VOA	50,000
25.	Trimethyl Benzene #1	VOA	140,000
26.	Trimethyl Benzene #2	VOA	41,000
27.	Diethyl Benzene	VOA	24,000
28.	Dimethyl Ethyl Benzene #1	VOA	47,000
29.	Dimethyl Ethyl Benzene #2	VOA	22,000
30.	Dimethyl Ethyl Benzene #3	VOA	25,000
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-11140
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1009 Project TFA-K
Odessa Drum Site

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Report 90-11140

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acrolein	10000	.....	< 10000
Acrylonitrile	10000	.....	< 10000
Benzene	5000	.....	< 5000
Bromoform	5000	.....	< 5000
Bromomethane	10000	.....	< 10000
Carbon tetrachloride	5000	.....	< 5000
Chlorobenzene	5000	.....	< 5000
Chlorodibromomethane	5000	.....	< 5000
2-Chloroethylvinyl ether	5000	.....	< 5000
Chloroethane	10000	.....	< 10000
Chloroform	5000	.....	< 5000
Chloromethane	10000	.....	< 10000
Dichlorobromomethane	5000	.....	< 5000
1,2-Dichlorobenzene	5000	.....	< 5000
1,3-Dichlorobenzene	5000	.....	< 5000
1,4-Dichlorobenzene	5000	.....	< 5000
1,1-Dichloroethane	5000	.....	< 5000
1,2-Dichloroethane	5000	.....	< 5000
1,1-Dichloroethene	5000	.....	< 5000
trans-1,2-Dichloroethene	5000	.....	< 5000
1,2-Dichloropropane	5000	.....	< 5000
cis-1,3-Dichloropropene	5000	.....	< 5000
trans-1,3-Dichloropropene	5000	.....	< 5000
Ethylbenzene	5000	.....	30000
Methylene chloride	10000	.....	< 10000
1,1,2,2-Tetrachloroethane	5000	.....	< 5000
Tetrachloroethene	5000	.....	< 5000
Toluene	5000	.....	69500
1,1,1-Trichloroethane	5000	.....	< 5000
1,1,2-Trichloroethane	5000	.....	< 5000
Trichloroethene	5000	.....	< 5000
Trichlorofluoromethane	10000	.....	< 10000
Vinyl chloride	10000	.....	< 10000

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acenaphthene	198000	.....	< 198000
Acenaphthylene	198000	.....	< 198000
Anthracene	198000	.....	< 198000
Benzidine	198000	.....	< 198000
Benzo(a)anthracene	198000	.....	< 198000
Benzo(b)fluoranthene	198000	.....	< 198000
Benzo(k)fluoranthene	198000	.....	< 198000
Benzo(a)pyrene	198000	.....	< 198000
Benzo(ghi)perylene	198000	.....	< 198000
Butyl benzyl phthalate	198000	.....	< 198000
4-Bromophenyl phenyl ether	198000	.....	< 198000
bis(2-Chloroethyl)ether	198000	.....	< 198000
bis(2-Chloroethoxy)methane	198000	.....	< 198000
bis(2-Ethylhexyl)phthalate	198000	.....	< 198000
bis(2-Chloroisopropyl)ether	198000	.....	< 198000
2-Chloronaphthalene	198000	.....	< 198000
4-Chlorophenyl phenyl ether	198000	.....	< 198000
Chrysene	198000	.....	< 198000
Dibenzo(a,h)anthracene	198000	.....	< 198000
di-n-Butylphthalate	198000	.....	< 198000
1,2-Dichlorobenzene	198000	.....	< 198000
1,3-Dichlorobenzene	198000	.....	< 198000
1,4-Dichlorobenzene	198000	.....	< 198000
3,3'-Dichlorobenzidine	390000	.....	< 390000
Diethylphthalate	198000	.....	< 198000
Dimethylphthalate	198000	.....	< 198000
2,4-Dinitrotoluene	198000	.....	< 198000
2,6-Dinitrololuene	198000	.....	< 198000
Di-n-Octylphthalate	198000	.....	< 198000
Fluoranthene	198000	.....	< 198000
Fluorene	198000	.....	< 198000
Hexachlorobenzene	198000	.....	< 198000
Hexachlorobutadiene	198000	.....	< 198000

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	198000	.....	< 198000
Hexachloroethane....................	198000	.....	< 198000
Indeno(1,2,3-cd)pyrene..............	198000	.....	< 198000
Isophorone..........................	198000	.....	< 198000
Naphthalene.........................	198000	.....	300000
Nitrobenzene........................	198000	.....	< 198000
N-Nitrosodimethylamine..............	198000	.....	< 198000
N-Nitrosodiphenylamine..............	198000	.....	< 198000
N-Nitrosodi-n-propylamine...........	198000	.....	< 198000
Phenanthrene........................	198000	.....	< 198000
Pyrene..............................	198000	.....	< 198000
1,2,4-Trichlorobenzene..............	198000	.....	< 198000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
4-Chloro-3-methylphenol	198000	< 198000
2-Chlorophenol	198000	< 198000
2,4-Dichlorophenol	198000	< 198000
2,4-Dimethylphenol	198000	< 198000
2,4-Dinitrophenol	990000	< 990000
2-Methyl-4,6-dinitrophenol	198000	< 198000
2-Nitrophenol	198000	< 198000
4-Nitrophenol	990000	< 990000
Pentachlorophenol	990000	< 990000
Phenol	198000	< 198000
2,4,6-Trichlorophenol	198000	< 198000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories Project:
Sample Number: 11140 Matrix: Sludge
Instrument ID: A Date Received: 04-30-90
Level: low Date Extracted: 05-04-90
Column: SP2100 Date Analyzed: 05-15-90
pH: 9.8 Dilution: 10

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	80	U
319-85-7	beta-BHC	80	U
319-86-8	delta-BHC	80	U
58-89-9	gamma-BHC(Lindane)	80	U
76-44-8	Heptachlor	80	U
309-00-2	Aldrin	80	U
1024-57-3	Heptachlor epoxide	80	U
959-98-8	Endosulfan I	80	U
60-57-1	Dieldrin	160	U
72-55-9	4,4'-DDE	160	U
72-20-8	Endrin	160	U
33213-65-9	Endosulfan II	160	U
72-54-8	4,4'-DDD	160	U
1031-07-8	Endosulfan sulfate	160	U
50-29-3	4,4'-DDT	160	U
72-43-5	Methoxychlor	800	U
53494-70-5	Endrin ketone	160	U
5103-71-9	alpha-Chlordane	800	U
5103-74-2	gamma-Chlordane	800	U
1601-35-2	Toxaphene	1600	U
12674-11-2	Arochlor-1016	800	U
11104-28-2	Arochlor-1221	800	U
11141-16-5	Arochlor-1232	800	U
53469-21-9	Arochlor-1242	800	U
12672-29-6	Arochlor-1248	800	U
11097-69-1	Arochlor-1254	800	U
11096-82-5	Arochlor-1260	800	U

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Report D90-11140

Tentatively Identified Compounds

Compound		Fraction	Amount(µg/kg)
1.	2-Methyl Naphthalene	ABN	300,000
2.	Propyl Benzene	ABN	260,000
3.	4-Methyl-1-Ethyl Benzene	ABN	420,000
4.	2-Methyl-1-Ethylbenzene	ABN	270,000
5.	1,2,4-Trimethyl Benzene	ABN	960,000
6.	1-Methyl-2-Propyl Benzene	ABN	280,000
7.	2-Ethyl-1,4-Dimethyl Benzene	ABN	310,000
8.	1-Ethyl-2,4-Dimethyl Benzene	ABN	290,000
9.	1,2,3,4-Tetramethyl Benzene	ABN	230,000
10.	1,2,3,5-Tetramethyl Benzene	ABN	270,000
11.	1-Methyl Naphthalene	ABN	230,000
12.	2-Ethenyl Naphthalene	ABN	360,000
13.	2-Ethyl-1,1-Biphenyl	ABN	440,000
14.	Unidentified Aliphatic Amine	ABN	310,000
15.	Unidentified Aliphatic Amine #2	ABN	250,000
16.	Unidentified Aliphatic Amine #3	ABN	2,000,000
17.	Unidentified Aliphatic Amine #4	ABN	770,000
18.	Unidentified Aliphatic Amine #5	ABN	340,000
19.	Xylenes	VOA	220,000
20.	Isopropyl Alcohol	VOA	11,000,000

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Tentatively Identified Compounds

Compound		Fraction	Amount(µg/kg)
21.	Propyl Benzene	VOA	45,000
22.	An Ethyl Methyl Benzene #1	VOA	250,000
23.	An Ethyl Methyl Benzene #2	VOA	55,000
24.	Trimethyl Benzene #1	VOA	170,000
25.	Trimethyl Benzene #2	VOA	57,000
26.	Diethyl Benzene	VOA	43,000
27.	Dimethyl Ethyl Benzene #1	VOA	78,000
28.	Dimethyl Ethyl Benzene #2	VOA	40,000
29.	Dimethyl Ethyl Benzene #3	VOA	40,000
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-11141
DATE: 5-10-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1003 Project TFA-K
Odessa Drum Site

NDRC LABORATORIES, INC.

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Report 90-11141

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acrolein	20000	.....	< 20000
Acrylonitrile	20000	.....	< 20000
Benzene	10000	.....	< 10000
Bromoform	10000	.....	< 10000
Bromomethane	20000	.....	< 20000
Carbon tetrachloride	10000	.....	< 10000
Chlorobenzene	10000	.....	< 10000
Chlorodibromomethane	10000	.....	< 10000
2-Chloroethylvinyl ether	10000	.....	< 10000
Chloroethane	20000	.....	< 20000
Chloroform	10000	.....	< 10000
Chloromethane	20000	.....	< 20000
Dichlorobromomethane	10000	.....	< 10000
1,2-Dichlorobenzene	10000	.....	< 10000
1,3-Dichlorobenzene	10000	.....	< 10000
1,4-Dichlorobenzene	10000	.....	< 10000
1,1-Dichloroethane	10000	.....	< 10000
1,2-Dichloroethane	10000	.....	< 10000
1,1-Dichloroethene	10000	.....	< 10000
trans-1,2-Dichloroethene	10000	.....	< 10000
1,2-Dichloropropane	10000	.....	< 10000
cis-1,3-Dichloropropene	10000	.....	< 10000
trans-1,3-Dichloropropene	10000	.....	< 10000
Ethylbenzene	10000	.....	36300
Methylene chloride	20000	.....	< 20000
1,1,2,2-Tetrachloroethane	10000	.....	< 10000
Tetrachloroethene	10000	.....	< 10000
Toluene	10000	.....	84200
1,1,1-Trichloroethane	10000	.....	18500
1,1,2-Trichloroethane	10000	.....	< 10000
Trichloroethene	10000	.....	< 10000
Trichlorofluoromethane	20000	.....	< 20000
Vinyl chloride	20000	.....	< 20000

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(μg/kg)		AMOUNT DETECTED(μg/kg)
Acenaphthene........................	198000	.....	< 198000
Acenaphthylene......................	198000	.....	< 198000
Anthracene..........................	198000	.....	< 198000
Benzidine...........................	198000	.....	< 198000
Benzo(a)anthracene..................	198000	.....	< 198000
Benzo(b)fluoranthene................	198000	.....	< 198000
Benzo(k)fluoranthene................	198000	.....	< 198000
Benzo(a)pyrene......................	198000	.....	< 198000
Benzo(ghi)perylene..................	198000	.....	< 198000
Butyl benzyl phthalate..............	198000	.....	< 198000
4-Bromophenyl phenyl ether..........	198000	.....	< 198000
bis(2-Chloroethyl)ether.............	198000	.....	< 198000
bis(2-Chloroethoxy)methane..........	198000	.....	< 198000
bis(2-Ethylhexyl)phthalate..........	198000	.....	< 198000
bis(2-Chloroisopropyl)ether.........	198000	.....	< 198000
2-Chloronaphthalene.................	198000	.....	< 198000
4-Chlorophenyl phenyl ether.........	198000	.....	< 198000
Chrysene............................	198000	.....	< 198000
Dibenzo(a,h)anthracene..............	198000	.....	< 198000
di-n-Butylphthalate.................	198000	.....	< 198000
1,2-Dichlorobenzene.................	198000	.....	< 198000
1,3-Dichlorobenzene.................	198000	.....	< 198000
1,4-Dichlorobenzene.................	198000	.....	< 198000
3,3'-Dichlorobenzidine..............	390000	.....	< 390000
Diethylphthalate....................	198000	.....	< 198000
Dimethylphthalate...................	198000	.....	< 198000
2,4-Dinitrotoluene..................	198000	.....	< 198000
2,6-Dinitrololuene..................	198000	.....	< 198000
Di-n-Octylphthalate.................	198000	.....	< 198000
Fluoranthene........................	198000	.....	< 198000
Fluorene............................	198000	.....	< 198000
Hexachlorobenzene...................	198000	.....	< 198000
Hexachlorobutadiene.................	198000	.....	< 198000

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	198000	.....	< 198000
Hexachloroethane....................	198000	.....	< 198000
Indeno(1,2,3-cd)pyrene..............	198000	.....	< 198000
Isophorone..........................	198000	.....	< 198000
Naphthalene.........................	198000	.....	630000
Nitrobenzene........................	198000	.....	< 198000
N-Nitrosodimethylamine..............	198000	.....	< 198000
N-Nitrosodiphenylamine..............	198000	.....	< 198000
N-Nitrosodi-n-propylamine...........	198000	.....	< 198000
Phenanthrene........................	198000	.....	< 198000
Pyrene..............................	198000	.....	< 198000
1,2,4-Trichlorobenzene..............	198000	.....	< 198000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(μg/kg)	AMOUNT DETECTED(μg/kg)
4-Chloro-3-methylphenol	198000	< 198000
2-Chlorophenol	198000	< 198000
2,4-Dichlorophenol	198000	< 198000
2,4-Dimethylphenol	198000	< 198000
2,4-Dinitrophenol	990000	< 990000
2-Methyl-4,6-dinitrophenol	198000	< 198000
2-Nitrophenol	198000	< 198000
4-Nitrophenol	990000	< 990000
Pentachlorophenol	990000	< 990000
Phenol	198000	< 198000
2,4,6-Trichlorophenol	198000	< 198000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories   Project: ____
Sample Number: 11141   Matrix: Sludge
Instrument ID: A   Date Received: 04-30-90
Level: low   Date Extracted: 05-04-90
Column: SP2100   Date Analyzed: 05-15-90
pH: 12.5   Dilution: 100

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	800	U
319-85-7	beta-BHC	800	U
319-86-8	delta-BHC	800	U
58-89-9	gamma-BHC(Lindane)	800	U
76-44-8	Heptachlor	800	U
309-00-2	Aldrin	800	U
1024-57-3	Heptachlor epoxide	800	U
959-98-8	Endosulfan I	800	U
60-57-1	Dieldrin	800	U
72-55-9	4,4'-DDE	800	U
72-20-8	Endrin	800	U
33213-65-9	Endosulfan II	800	U
72-54-8	4,4'-DDD	800	U
1031-07-8	Endosulfan sulfate	800	U
50-29-3	4,4'-DDT	800	U
72-43-5	Methoxychlor	8000	U
53494-70-5	Endrin ketone	1600	U
5103-71-9	alpha-Chlordane	8000	U
5103-74-2	gamma-Chlordane	8000	U
16001-35-2	Toxaphene	16000	U
12674-11-2	Arochlor-1016	8000	U
11104-28-2	Arochlor-1221	8000	U
11141-16-5	Arochlor-1232	8000	U
53469-21-9	Arochlor-1242	8000	U
12672-29-6	Arochlor-1248	8000	U
11097-69-1	Arochlor-1254	8000	U
11096-82-5	Arochlor-1260	8000	U

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Report D90-11141

Tentatively Identified Compounds

Compound		Fraction	Amount(μg/kg)
1.	2-Methyl Naphthalene	ABN	670,000
2.	4-Methyl-1-Ethylbenzene	ABN	1,800,000
3.	3-Methyl-1-Ethylbenzene	ABN	640,000
4.	2-Methyl-1-Ethylbenzene	ABN	490,000
5.	1,3,5-Trimethylbenzene	ABN	1,700,000
6.	1,2,4-Trimethylbenzene	ABN	560,000
7.	1-Methyl-3-Propyl Benzene	ABN	810,000
8.	Unidentified Aromatic Hydrocarbon	ABN	520,000
9.	1-Ethyl-2,4-Dimethyl Benzene	ABN	620,000
10.	1,2,3,4-Tetramethyl Benzene	ABN	180,000
11.	1,2,3,5-Tetramethyl Benzene	ABN	230,000
12.	2-Ethyl-1,3-Dimethyl Benzene	ABN	180,000
13.	1-Methyl Naphthalene	ABN	250,000
14.	Benzene, 1,1-Ethylidene bis	ABN	1,000,000
15.	Unidentified Aliphatic Amine	ABN	790,000
16.	Unidentified Aromatic Hydrocarbon #2	ABN	1,000,000
17.	Unidentified Aliphatic Amine #2	ABN	990,000
18.	Unidentified Aliphatic Amine #3	ABN	3,800,000
19.	Unidentified Aliphatic Amine #4	ABN	710,000
20.	Unidentified Aliphatic Amine #5	ABN	1,400,000

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Tentatively Identified Compounds

Compound		Fraction	Amount ($\mu g/kg$)
21.	Unidentified Aromatic Amine	ABN	1,700,000
22.	Xylenes	VOA	330,000
23.	An Ethyl Methyl Benzene #1	VOA	520,000
24.	An Ethyl Methyl Benzene #2	VOA	110,000
25.	Trimethyl Benzene #1	VOA	360,000
26.	Trimethyl Benzene #2	VOA	110,000
27.	Diethyl Benzene	VOA	150,000
28.	Dimethyl Ethyl Benzene #1	VOA	200,000
29.	Dimethyl Ethyl Benzene #2	VOA	130,000
30.	Dimethyl Ethyl Benzene #3	VOA	120,000
31.	Methyl Propenyl Benzene	VOA	100,000
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-11142
DATE: 5-10-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1004 Project TFA-K
Odessa Drum Site

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Report 90-11142

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(μg/kg)		AMOUNT DETECTED(μg/kg)
Acrolein	20000	.....	< 20000
Acrylonitrile	20000	.....	< 20000
Benzene	10000	.....	< 10000
Bromoform	10000	.....	< 10000
Bromomethane	20000	.....	< 20000
Carbon tetrachloride	10000	.....	< 10000
Chlorobenzene	10000	.....	< 10000
Chlorodibromomethane	10000	.....	< 10000
2-Chloroethylvinyl ether	10000	.....	< 10000
Chloroethane	20000	.....	< 20000
Chloroform	10000	.....	< 10000
Chloromethane	20000	.....	< 20000
Dichlorobromomethane	10000	.....	< 10000
1,2-Dichlorobenzene	10000	.....	< 10000
1,3-Dichlorobenzene	10000	.....	< 10000
1,4-Dichlorobenzene	10000	.....	< 10000
1,1-Dichloroethane	10000	.....	< 10000
1,2-Dichloroethane	10000	.....	< 10000
1,1-Dichloroethene	10000	.....	< 10000
trans-1,2-Dichloroethene	10000	.....	< 10000
1,2-Dichloropropane	10000	.....	< 10000
cis-1,3-Dichloropropene	10000	.....	< 10000
trans-1,3-Dichloropropene	10000	.....	< 10000
Ethylbenzene	10000	.....	29300
Methylene chloride	20000	.....	< 20000
1,1,2,2-Tetrachloroethane	10000	.....	< 10000
Tetrachloroethene	10000	.....	< 10000
Toluene	10000	.....	166000
1,1,1-Trichloroethane	10000	.....	< 10000
1,1,2-Trichloroethane	10000	.....	< 10000
Trichloroethene	10000	.....	< 10000
Trichlorofluoromethane	20000	.....	< 20000
Vinyl chloride	20000	.....	< 20000

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
Acenaphthene	198000	< 198000
Acenaphthylene	198000	< 198000
Anthracene	198000	< 198000
Benzidine	198000	< 198000
Benzo(a)anthracene	198000	< 198000
Benzo(b)fluoranthene	198000	< 198000
Benzo(k)fluoranthene	198000	< 198000
Benzo(a)pyrene	198000	< 198000
Benzo(ghi)perylene	198000	< 198000
Butyl benzyl phthalate	198000	< 198000
4-Bromophenyl phenyl ether	198000	< 198000
bis(2-Chloroethyl)ether	198000	< 198000
bis(2-Chloroethoxy)methane	198000	< 198000
bis(2-Ethylhexyl)phthalate	198000	< 198000
bis(2-Chloroisopropyl)ether	198000	< 198000
2-Chloronaphthalene	198000	< 198000
4-Chlorophenyl phenyl ether	198000	< 198000
Chrysene	198000	< 198000
Dibenzo(a,h)anthracene	198000	< 198000
di-n-Butylphthalate	198000	< 198000
1,2-Dichlorobenzene	198000	< 198000
1,3-Dichlorobenzene	198000	< 198000
1,4-Dichlorobenzene	198000	< 198000
3,3'-Dichlorobenzidine	390000	< 390000
Diethylphthalate	198000	< 198000
Dimethylphthalate	198000	< 198000
2,4-Dinitrotoluene	198000	< 198000
2,6-Dinitrololuene	198000	< 198000
Di-n-Octylphthalate	198000	< 198000
Fluoranthene	198000	< 198000
Fluorene	198000	< 198000
Hexachlorobenzene	198000	< 198000
Hexachlorobutadiene	198000	< 198000

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	198000	.....	< 198000
Hexachloroethane....................	198000	.....	< 198000
Indeno(1,2,3-cd)pyrene..............	198000	.....	< 198000
Isophorone..........................	198000	.....	< 198000
Naphthalene.........................	198000	.....	440000
Nitrobenzene........................	198000	.....	< 198000
N-Nitrosodimethylamine..............	198000	.....	< 198000
N-Nitrosodiphenylamine..............	198000	.....	< 198000
N-Nitrosodi-n-propylamine...........	198000	.....	< 198000
Phenanthrene........................	198000	.....	< 198000
Pyrene..............................	198000	.....	< 198000
1,2,4-Trichlorobenzene..............	198000	.....	< 198000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
4-Chloro-3-methylphenol	198000	< 198000
2-Chlorophenol	198000	< 198000
2,4-Dichlorophenol	198000	< 198000
2,4-Dimethylphenol	198000	< 198000
2,4-Dinitrophenol	990000	< 990000
2-Methyl-4,6-dinitrophenol	198000	< 198000
2-Nitrophenol	198000	< 198000
4-Nitrophenol	990000	< 990000
Pentachlorophenol	990000	< 990000
Phenol	198000	< 198000
2,4,6-Trichlorophenol	198000	< 198000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories Project:
Sample Number: 11142 Matrix: Sludge
Instrument ID: A Date Received: 04-30-90
Level: low Date Extracted: 05-04-90
Column: SP2100 Date Analyzed: 05-15-90
pH: 10.8 Dilution: 250

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	2000	U
319-85-7	beta-BHC	2000	U
319-86-8	delta-BHC	2000	U
58-89-9	gamma-BHC(Lindane)	2000	U
76-44-8	Heptachlor	2000	U
309-00-2	Aldrin	2000	U
1024-57-3	Heptachlor epoxide	2000	U
959-98-8	Endosulfan I	2000	U
60-57-1	Dieldrin	4000	U
72-55-9	4,4'-DDE	4000	U
72-20-8	Endrin	4000	U
33213-65-9	Endosulfan II	4000	U
72-54-8	4,4'-DDD	4000	U
1031-07-8	Endosulfan sulfate	4000	U
50-29-3	4,4'-DDT	4000	U
72-43-5	Methoxychlor	20000	U
53494-70-5	Endrin ketone	4000	U
5103-71-9	alpha-Chlordane	20000	U
5103-74-2	gamma-Chlordane	20000	U
40001-35-2	Toxaphene	40000	U
12674-11-2	Arochlor-1016	20000	U
11104-28-2	Arochlor-1221	20000	U
11141-16-5	Arochlor-1232	20000	U
53469-21-9	Arochlor-1242	20000	U
12672-29-6	Arochlor-1248	20000	U
11097-69-1	Arochlor-1254	20000	U
11096-82-5	Arochlor-1260	20000	U

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Report D90-11142

Tentatively Identified Compounds

Compound		Fraction	Amount ($\mu g/kg$)
1.	2-Methyl Naphthalene	ABN	490,000
2.	Propyl Benzene	ABN	770,000
3.	4-Methyl-1-Ethyl Benzene	ABN	2,700,000
4.	1,3,5-Trimethyl Benzene	ABN	1,000,000
5.	2-Methyl-1-Ethyl Benzene	ABN	770,000
6.	1,2,4-Trimethyl Benzene	ABN	2,200,000
7.	1-Ethyl-3-Methyl Benzene	ABN	680,000
8.	1-Ethyl-2,3-Dimethyl Benzene	ABN	390,000
9.	1,2,3,5-Tetramethyl Benzene	ABN	350,000
10.	1,2,3,4-Tetramethyl Benzene	ABN	380,000
11.	5-Methyl-2,3-Dihydro-1H-Indene	ABN	250,000
12.	1,1-Dimethylbutyl Benzene	ABN	340,000
13.	1-Methyl Naphthalene	ABN	390,000
14.	Benzene 1,1-Ethylidenebis	ABN	1,000,000
15.	Unidentified Aliphatic Amine	ABN	1,200,000
16.	Unidentified Aromatic Hydrocarbon	ABN	480,000
17.	Unidentified Aromatic Hydrocarbon #2	ABN	510,000
18.	Unidentified Aliphatic Amine #2	ABN	480,000
19.	Unidentified Aliphatic Amine #3	ABN	1,900,000
20.	Unidentified Aliphatic Amine #4	ABN	740,000

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Tentatively Identified Compounds

Compound	Fraction	Amount(µg/kg)
21. Xylenes	VOA	260,000
22. Propyl Benzene	VOA	110,000
23. An Ethyl Methyl Benzene #1	VOA	670,000
24. An Ethyl Methyl Benzene #2	VOA	140,000
25. Trimethyl Benzene #1	VOA	400,000
26. Trimethyl Benzene #2	VOA	120,000
27. Diethyl Benzene	VOA	110,000
28. Dimethyl Ethyl Benzene #1	VOA	180,000
29. Dimethyl Ethyl Benzene #2	VOA	92,000
30. Dimethyl Ethyl Benzene #3	VOA	90,000
31.		
32.		
33.		
34.		
35.		
36.		
37.		
38.		
39.		
40.		

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-11143
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1005 Project TFA-K
Odessa Drum Site

NDRC LABORATORIES, INC.

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Report 90-11143

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acrolein	20000	.....	< 20000
Acrylonitrile	20000	.....	< 20000
Benzene	10000	.....	< 10000
Bromoform	10000	.....	< 10000
Bromomethane	20000	.....	< 20000
Carbon tetrachloride	10000	.....	< 10000
Chlorobenzene	10000	.....	< 10000
Chlorodibromomethane	10000	.....	< 10000
2-Chloroethylvinyl ether	10000	.....	< 10000
Chloroethane	20000	.....	< 20000
Chloroform	10000	.....	< 10000
Chloromethane	20000	.....	< 20000
Dichlorobromomethane	10000	.....	< 10000
1,2-Dichlorobenzene	10000	.....	< 10000
1,3-Dichlorobenzene	10000	.....	< 10000
1,4-Dichlorobenzene	10000	.....	< 10000
1,1-Dichloroethane	10000	.....	< 10000
1,2-Dichloroethane	10000	.....	< 10000
1,1-Dichloroethene	10000	.....	< 10000
trans-1,2-Dichloroethene	10000	.....	< 10000
1,2-Dichloropropane	10000	.....	< 10000
cis-1,3-Dichloropropene	10000	.....	< 10000
trans-1,3-Dichloropropene	10000	.....	< 10000
Ethylbenzene	10000	.....	20200
Methylene chloride	20000	.....	< 20000
1,1,2,2-Tetrachloroethane	10000	.....	< 10000
Tetrachloroethene	10000	.....	< 10000
Toluene	10000	.....	174000
1,1,1-Trichloroethane	10000	.....	11300
1,1,2-Trichloroethane	10000	.....	< 10000
Trichloroethene	10000	.....	< 10000
Trichlorofluoromethane	20000	.....	< 20000
Vinyl chloride	20000	.....	< 20000

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
Acenaphthene	198000	< 198000
Acenaphthylene	198000	< 198000
Anthracene	198000	< 198000
Benzidine	198000	< 198000
Benzo(a)anthracene	198000	< 198000
Benzo(b)fluoranthene	198000	< 198000
Benzo(k)fluoranthene	198000	< 198000
Benzo(a)pyrene	198000	< 198000
Benzo(ghi)perylene	198000	< 198000
Butyl benzyl phthalate	198000	< 198000
4-Bromophenyl phenyl ether	198000	< 198000
bis(2-Chloroethyl)ether	198000	< 198000
bis(2-Chloroethoxy)methane	198000	< 198000
bis(2-Ethylhexyl)phthalate	198000	< 198000
bis(2-Chloroisopropyl)ether	198000	< 198000
2-Chloronaphthalene	198000	< 198000
4-Chlorophenyl phenyl ether	198000	< 198000
Chrysene	198000	< 198000
Dibenzo(a,h)anthracene	198000	< 198000
di-n-Butylphthalate	198000	< 198000
1,2-Dichlorobenzene	198000	< 198000
1,3-Dichlorobenzene	198000	< 198000
1,4-Dichlorobenzene	198000	< 198000
3,3'-Dichlorobenzidine	390000	< 390000
Diethylphthalate	198000	< 198000
Dimethylphthalate	198000	< 198000
2,4-Dinitrotoluene	198000	< 198000
2,6-Dinitrololuene	198000	< 198000
Di-n-Octylphthalate	198000	< 198000
Fluoranthene	198000	< 198000
Fluorene	198000	< 198000
Hexachlorobenzene	198000	< 198000
Hexachlorobutadiene	198000	< 198000

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	198000	.....	< 198000
Hexachloroethane....................	198000	.....	< 198000
Indeno(1,2,3-cd)pyrene..............	198000	.....	< 198000
Isophorone..........................	198000	.....	< 198000
Naphthalene.........................	198000	.....	460000
Nitrobenzene........................	198000	.....	< 198000
N-Nitrosodimethylamine..............	198000	.....	< 198000
N-Nitrosodiphenylamine..............	198000	.....	< 198000
N-Nitrosodi-n-propylamine...........	198000	.....	< 198000
Phenanthrene........................	198000	.....	< 198000
Pyrene..............................	198000	.....	< 198000
1,2,4-Trichlorobenzene..............	198000	.....	< 198000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(μg/kg)	AMOUNT DETECTED(μg/kg)
4-Chloro-3-methylphenol	198000	< 198000
2-Chlorophenol	198000	< 198000
2,4-Dichlorophenol	198000	< 198000
2,4-Dimethylphenol	198000	< 198000
2,4-Dinitrophenol	990000	< 990000
2-Methyl-4,6-dinitrophenol	198000	< 198000
2-Nitrophenol	198000	< 198000
4-Nitrophenol	990000	< 990000
Pentachlorophenol	990000	< 990000
Phenol	198000	< 198000
2,4,6-Trichlorophenol	198000	< 198000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories Project: ______
Sample Number: 11143 Matrix: Sludge
Instrument ID: A Date Received: 04-30-90
Level: low Date Extracted: 05-04-90
Column: SP2100 Date Analyzed: 05-15-90
pH: 9.2 Dilution: 250

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	2000	U
319-85-7	beta-BHC	2000	U
319-86-8	delta-BHC	2000	U
58-89-9	gamma-BHC(Lindane)	2000	U
76-44-8	Heptachlor	3700	
309-00-2	Aldrin	2000	U
1024-57-3	Heptachlor epoxide	2000	U
959-98-8	Endosulfan I	2000	U
60-57-1	Dieldrin	4000	U
72-55-9	4,4'-DDE	4000	U
72-20-8	Endrin	4000	U
33213-65-9	Endosulfan II	4000	U
72-54-8	4,4'-DDD	4000	U
1031-07-8	Endosulfan sulfate	4000	U
50-29-3	4,4'-DDT	4000	U
72-43-5	Methoxychlor	20000	U
53494-70-5	Endrin ketone	4000	U
5103-71-9	alpha-Chlordane	20000	U
5103-74-2	gamma-Chlordane	20000	U
40001-35-2	Toxaphene	40000	U
12674-11-2	Arochlor-1016	20000	U
11104-28-2	Arochlor-1221	20000	U
11141-16-5	Arochlor-1232	20000	U
53469-21-9	Arochlor-1242	20000	U
12672-29-6	Arochlor-1248	20000	U
11097-69-1	Arochlor-1254	20000	U
11096-82-5	Arochlor-1260	20000	U

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Report D90-11143

Tentatively Identified Compounds

Compound		Fraction	Amount (µg/kg)
1.	2-Methyl Naphthalene	ABN	560,000
2.	Propyl Benzene	ABN	580,000
3.	4-Methyl-1-Ethyl Benzene	ABN	2,100,000
4.	1,3,5-Trimethyl Benzene	ABN	800,000
5.	2-Methyl-1-Ethyl Benzene	ABN	600,000
6.	1,2,4-Trimethyl Benzene	ABN	1,800,000
7.	3-Methyl-1-Ethylbenzene	ABN	540,000
8.	3-Propyl-1-Methyl Benzene	ABN	340,000
9.	Unidentified Aromatic Hydrocarbon	ABN	320,000
10.	2-Ethyl-1,4-Dimethylbenzene	ABN	310,000
11.	1,2,3,4-Tetramethyl Benzene	ABN	280,000
12.	1,2,3,5-Tetramethyl Benzene	ABN	330,000
13.	Unidentified Aromatic Hydrocarbon #2	ABN	210,000
14.	Unidentified Aromatic Hydrocarbon #3	ABN	260,000
15.	1-Methyl Naphthalene	ABN	430,000
16.	2-Ethenylnaphthalene	ABN	410,000
17.	1,4-Dimethyl Naphthalene	ABN	350,000
18.	Unidentified Aliphatic Amine	ABN	540,000
19.	Unidentified Aliphatic Amine #2	ABN	500,000
20.	Unidentified Aliphatic Amine #3	ABN	680,000

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Tentatively Identified Compounds

Compound		Fraction	Amount(μg/kg)
21.	Xylenes	VOA	200,000
22.	Propyl Benzene	VOA	97,000
23.	An Ethyl Methyl Benzene #1	VOA	580,000
24.	An Ethyl Methyl Benzene #2	VOA	130,000
25.	Trimethyl Benzene #1	VOA	370,000
26.	Trimethyl Benzene #2	VOA	110,000
27.	Diethyl Benzene	VOA	62,000
28.	Dimethyl Ethyl Benzene #1	VOA	200,000
29.	Dimethyl Ethyl Benzene #2	VOA	66,000
30.	Dimethyl Ethyl Benzene #3	VOA	76,000
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-11144
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1006 Project TFA-K
Odessa Drum Site

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Report 90-11144

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acrolein	100	.....	<100
Acrylonitrile	100	.....	<100
Benzene	50	.....	< 50
Bromoform	50	.....	< 50
Bromomethane	100	.....	<100
Carbon tetrachloride	50	.....	< 50
Chlorobenzene	50	.....	< 50
Chlorodibromomethane	50	.....	< 50
2-Chloroethylvinyl ether	50	.....	< 50
Chloroethane	100	.....	<100
Chloroform	50	.....	< 50
Chloromethane	100	.....	<100
Dichlorobromomethane	50	.....	< 50
1,2-Dichlorobenzene	50	.....	< 50
1,3-Dichlorobenzene	50	.....	< 50
1,4-Dichlorobenzene	50	.....	< 50
1,1-Dichloroethane	50	.....	< 50
1,2-Dichloroethane	50	.....	< 50
1,1-Dichloroethene	50	.....	< 50
trans-1,2-Dichloroethene	50	.....	< 50
1,2-Dichloropropane	50	.....	< 50
cis-1,3-Dichloropropene	50	.....	< 50
trans-1,3-Dichloropropene	50	.....	< 50
Ethylbenzene	50	.....	< 50
Methylene chloride	100	.....	<100
1,1,2,2-Tetrachloroethane	50	.....	< 50
Tetrachloroethene	50	.....	< 50
Toluene	50	.....	540
1,1,1-Trichloroethane	50	.....	< 50
1,1,2-Trichloroethane	50	.....	< 50
Trichloroethene	50	.....	< 50
Trichlorofluoromethane	100	.....	<100
Vinyl chloride	100	.....	<100

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(μg/kg)	AMOUNT DETECTED(μg/kg)
Acenaphthene	2000	< 2000
Acenaphthylene	2000	< 2000
Anthracene	2000	< 2000
Benzidine	2000	< 2000
Benzo(a)anthracene	2000	< 2000
Benzo(b)fluoranthene	2000	< 2000
Benzo(k)fluoranthene	2000	< 2000
Benzo(a)pyrene	2000	< 2000
Benzo(ghi)perylene	2000	< 2000
Butyl benzyl phthalate	2000	< 2000
4-Bromophenyl phenyl ether	2000	< 2000
bis(2-Chloroethyl)ether	2000	< 2000
bis(2-Chloroethoxy)methane	2000	< 2000
bis(2-Ethylhexyl)phthalate	2000	< 2000
bis(2-Chloroisopropyl)ether	2000	< 2000
2-Chloronaphthalene	2000	< 2000
4-Chlorophenyl phenyl ether	2000	< 2000
Chrysene	2000	< 2000
Dibenzo(a,h)anthracene	2000	< 2000
di-n-Butylphthalate	2000	< 2000
1,2-Dichlorobenzene	2000	< 2000
1,3-Dichlorobenzene	2000	< 2000
1,4-Dichlorobenzene	2000	< 2000
3,3'-Dichlorobenzidine	3900	< 3900
Diethylphthalate	2000	< 2000
Dimethylphthalate	2000	< 2000
2,4-Dinitrotoluene	2000	< 2000
2,6-Dinitrololuene	2000	< 2000
Di-n-Octylphthalate	2000	< 2000
Fluoranthene	2000	< 2000
Fluorene	2000	< 2000
Hexachlorobenzene	2000	< 2000
Hexachlorobutadiene	2000	< 2000

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	2000	.....	<	2000
Hexachloroethane....................	2000	.....	<	2000
Indeno(1,2,3-cd)pyrene..............	2000	.....	<	2000
Isophorone..........................	2000	.....	<	2000
Naphthalene.........................	2000	.....	<	2000
Nitrobenzene........................	2000	.....	<	2000
N-Nitrosodimethylamine..............	2000	.....	<	2000
N-Nitrosodiphenylamine..............	2000	.....	<	2000
N-Nitrosodi-n-propylamine...........	2000	.....	<	2000
Phenanthrene........................	2000	.....	<	2000
Pyrene..............................	2000	.....	<	2000
1,2,4-Trichlorobenzene..............	2000	.....	<	2000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
4-Chloro-3-methylphenol.............	20000	......	< 20000
2-Chlorophenol......................	20000	......	< 20000
2,4-Dichlorophenol..................	20000	......	< 20000
2,4-Dimethylphenol..................	20000	......	< 20000
2,4-Dinitrophenol...................	20000	......	< 20000
2-Methyl-4,6-dinitrophenol..........	20000	......	< 20000
2-Nitrophenol.......................	20000	......	< 20000
4-Nitrophenol.......................	99000	......	< 99000
Pentachlorophenol...................	99000	......	< 99000
Phenol..............................	20000	......	< 20000
2,4,6-Trichlorophenol...............	20000	......	< 20000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories   Project: ______
Sample Number: 11144   Matrix: Sludge
Instrument ID: A   Date Received: 04-30-90
Level: low   Date Extracted: 05-04-90
Column: SP2100   Date Analyzed: 05-15-90
pH: 11.9   Dilution: 5

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	40	U
319-85-7	beta-BHC	40	U
319-86-8	delta-BHC	40	U
58-89-9	gamma-BHC(Lindane)	40	U
76-44-8	Heptachlor	40	U
309-00-2	Aldrin	40	U
1024-57-3	Heptachlor epoxide	40	U
959-98-8	Endosulfan I	40	U
60-57-1	Dieldrin	80	U
72-55-9	4,4'-DDE	80	U
72-20-8	Endrin	80	U
33213-65-9	Endosulfan II	80	U
72-54-8	4,4'-DDD	80	U
1031-07-8	Endosulfan sulfate	80	U
50-29-3	4,4'-DDT	80	U
72-43-5	Methoxychlor	400	U
53494-70-5	Endrin ketone	80	U
5103-71-9	alpha-Chlordane	400	U
5103-74-2	gamma-Chlordane	400	U
801-35-2	Toxaphene	800	U
12674-11-2	Arochlor-1016	400	U
11104-28-2	Arochlor-1221	400	U
11141-16-5	Arochlor-1232	400	U
53469-21-9	Arochlor-1242	400	U
12672-29-6	Arochlor-1248	400	U
11097-69-1	Arochlor-1254	400	U
11096-82-5	Arochlor-1260	400	U

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Report D90-11144

Tentatively Identified Compounds

	Compound	Fraction	Amount(µg/kg)
1.	4-Morpholineethanamine	ABN	14,000
2.	Unidentified Glycol Amine	ABN	66,000
3.	Unidentified Ethanol Amine	ABN	43,000
4.	Unidentified Ethanol Amine #2	ABN	36,000
5.	Unidentified Cyclic Amine	ABN	44,000
6.	Unidentified Aliphatic Alcohol	ABN	4,400
7.	Unidentified Cyclic Amine #2	ABN	4,200
8.	Unidentified Aliphatic Alcohol #2	ABN	5,000
9.	Isopropyl Alcohol	VOA	490,000
10.	Xylenes	VOA	900
11.	An Ethyl Methyl Benzene	VOA	1,700
12.	Trimethyl Benzene #1	VOA	1,600
13.	Unidentified Alcohol	VOA	990
14.	Trimethyl Benzene #2	VOA	430
15.	Dimethyl Ethyl Benzene #1	VOA	600
16.	Dimethyl Ethyl Benzene #2	VOA	400
17.	Tetramethyl Benzene #1	VOA	450
18.	Unidentified Alkene	VOA	470
19.	Methyl Propanol	VOA	7,000
20.			

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90 REPORT NUMBER: 90-11145
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1007 Project TFA-K
Odessa Drum Site

NDRC LABORATORIES, INC.

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Report 90-11145

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acrolein	50	.....	< 50
Acrylonitrile	50	.....	< 50
Benzene	25	.....	< 25
Bromoform	25	.....	< 25
Bromomethane	50	.....	< 50
Carbon tetrachloride	25	.....	< 25
Chlorobenzene	25	.....	< 25
Chlorodibromomethane	25	.....	< 25
2-Chloroethylvinyl ether	25	.....	< 25
Chloroethane	50	.....	< 50
Chloroform	25	.....	< 25
Chloromethane	50	.....	< 50
Dichlorobromomethane	25	.....	< 25
1,2-Dichlorobenzene	25	.....	< 25
1,3-Dichlorobenzene	25	.....	< 25
1,4-Dichlorobenzene	25	.....	< 25
1,1-Dichloroethane	25	.....	< 25
1,2-Dichloroethane	25	.....	< 25
1,1-Dichloroethene	25	.....	< 25
trans-1,2-Dichloroethene	25	.....	< 25
1,2-Dichloropropane	25	.....	< 25
cis-1,3-Dichloropropene	25	.....	< 25
trans-1,3-Dichloropropene	25	.....	< 25
Ethylbenzene	25	.....	< 25
Methylene chloride	50	.....	< 50
1,1,2,2-Tetrachloroethane	25	.....	< 25
Tetrachloroethene	25	.....	< 25
Toluene	25	.....	210
1,1,1-Trichloroethane	25	.....	< 25
1,1,2-Trichloroethane	25	.....	< 25
Trichloroethene	25	.....	< 25
Trichlorofluoromethane	50	.....	< 50
Vinyl chloride	50	.....	< 50

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acenaphthene........................	9900	.....	< 9900
Acenaphthylene......................	9900	.....	< 9900
Anthracene..........................	9900	.....	< 9900
Benzidine...........................	9900	.....	< 9900
Benzo(a)anthracene..................	9900	.....	< 9900
Benzo(b)fluoranthene................	9900	.....	< 9900
Benzo(k)fluoranthene................	9900	.....	< 9900
Benzo(a)pyrene......................	9900	.....	< 9900
Benzo(ghi)perylene..................	9900	.....	< 9900
Butyl benzyl phthalate..............	9900	.....	< 9900
4-Bromophenyl phenyl ether..........	9900	.....	< 9900
bis(2-Chloroethyl)ether.............	9900	.....	< 9900
bis(2-Chloroethoxy)methane..........	9900	.....	< 9900
bis(2-Ethylhexyl)phthalate..........	9900	.....	< 9900
bis(2-Chloroisopropyl)ether.........	9900	.....	< 9900
2-Chloronaphthalene.................	9900	.....	< 9900
4-Chlorophenyl phenyl ether.........	9900	.....	< 9900
Chrysene............................	9900	.....	< 9900
Dibenzo(a,h)anthracene..............	9900	.....	< 9900
di-n-Butylphthalate.................	9900	.....	< 9900
1,2-Dichlorobenzene.................	9900	.....	< 9900
1,3-Dichlorobenzene.................	9900	.....	< 9900
1,4-Dichlorobenzene.................	9900	.....	< 9900
3,3'-Dichlorobenzidine..............	19500	.....	< 19500
Diethylphthalate....................	9900	.....	< 9900
Dimethylphthalate...................	9900	.....	< 9900
2,4-Dinitrotoluene..................	9900	.....	< 9900
2,6-Dinitrololuene..................	9900	.....	< 9900
Di-n-Octylphthalate.................	9900	.....	< 9900
Fluoranthene........................	9900	.....	< 9900
Fluorene............................	9900	.....	< 9900
Hexachlorobenzene...................	9900	.....	< 9900
Hexachlorobutadiene.................	9900	.....	< 9900

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BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	9900	.....	<	9900
Hexachloroethane....................	9900	.....	<	9900
Indeno(1,2,3-cd)pyrene..............	9900	.....	<	9900
Isophorone..........................	9900	.....	<	9900
Naphthalene.........................	9900	.....	<	9900
Nitrobenzene........................	9900	.....	<	9900
N-Nitrosodimethylamine..............	9900	.....	<	9900
N-Nitrosodiphenylamine..............	9900	.....	<	9900
N-Nitrosodi-n-propylamine...........	9900	.....	<	9900
Phenanthrene........................	9900	.....	<	9900
Pyrene..............................	9900	.....	<	9900
1,2,4-Trichlorobenzene..............	9900	.....	<	9900

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
4-Chloro-3-methylphenol	9900	< 9900
2-Chlorophenol	9900	< 9900
2,4-Dichlorophenol	9900	< 9900
2,4-Dimethylphenol	9900	< 9900
2,4-Dinitrophenol	9900	< 9900
2-Methyl-4,6-dinitrophenol	9900	< 9900
2-Nitrophenol	9900	< 9900
4-Nitrophenol	49500	< 49500
Pentachlorophenol	49500	< 49500
Phenol	9900	< 9900
2,4,6-Trichlorophenol	9900	< 9900

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories   Project: ____
Sample Number: 11145   Matrix: Sludge
Instrument ID: A   Date Received: 04-30-90
Level: low   Date Extracted: 05-04-90
Column: SP2100   Date Analyzed: 05-16-90
pH: 12.0   Dilution: 5

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	40	U
319-85-7	beta-BHC	40	U
319-86-8	delta-BHC	40	U
58-89-9	gamma-BHC(Lindane)	40	U
76-44-8	Heptachlor	40	U
309-00-2	Aldrin	40	U
1024-57-3	Heptachlor epoxide	40	U
959-98-8	Endosulfan I	40	U
60-57-1	Dieldrin	80	U
72-55-9	4,4'-DDE	80	U
72-20-8	Endrin	80	U
33213-65-9	Endosulfan II	80	U
72-54-8	4,4'-DDD	80	U
1031-07-8	Endosulfan sulfate	80	U
50-29-3	4,4'-DDT	80	U
72-43-5	Methoxychlor	400	U
53494-70-5	Endrin ketone	80	U
5103-71-9	alpha-Chlordane	400	U
5103-74-2	gamma-Chlordane	400	U
801-35-2	Toxaphene	800	U
12674-11-2	Arochlor-1016	400	U
11104-28-2	Arochlor-1221	400	U
11141-16-5	Arochlor-1232	400	U
53469-21-9	Arochlor-1242	400	U
12672-29-6	Arochlor-1248	400	U
11097-69-1	Arochlor-1254	400	U
11096-82-5	Arochlor-1260	400	U

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Report D90-11145

Tentatively Identified Compounds

Compound		Fraction	Amount (μg/kg)
1.	Butyl Cellosolve	ABN	78,000
2.	2-(Dimethylamine)Ethanol	ABN	430,000
3.	Undecane	ABN	33,000
4.	Unidentified Alkane	ABN	19,000
5.	Unidentified Alkane #2	ABN	21,000
6.	2-Methyl Undecane	ABN	19,000
7.	Dodecane	ABN	79,000
8.	3,6-Dimethylundecane	ABN	45,000
9.	4,6-Dimethylundecane	ABN	18,000
10.	2,10-Dimethylundecane	ABN	20,000
11.	Tridecane	ABN	16,000
12.	4,6-Dimethyl Dodecane	ABN	26,000
13.	6-Methyl Tridecane	ABN	19,000
14.	Hexylcyclohexane	ABN	32,000
15.	5-Methyl Tridecane	ABN	46,000
16.	1,7-Dimethylnaphthalene	ABN	48,000
17.	1,2-Dimethylnaphthalene	ABN	46,000
18.	1,8-Dimethylnaphthalene	ABN	47,000
19.	2-Methyl-6-Propyldodecane	ABN	44,000
20.	1,4,5-Trimethyl Naphthalene	ABN	34,000

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Tentatively Identified Compounds

Compound		Fraction	Amount (μg/kg)
21.	Heptadecene	ABN	29,000
22.	Isopropyl Alcohol	VOA	6,900
23.	Heptane	VOA	3,300
24.	Trimethyl Hexane	VOA	5,600
25.	Nonane	VOA	6,700
26.	Unidentified Alkane #1	VOA	6,800
27.	Unidentified Alkane #2	VOA	4,200
28.	Unidentified Alkane #3	VOA	11,000
29.	Unidentified Unsaturated Hydrocarbon	VOA	4,500
30.	Unidentified Unsaturated Hydrocarbon #1	VOA	3,200
31.	Unidentified Unsaturated Hydrocarbon #2	VOA	6,800
32.	Unidentified Unsaturated Hydrocarbon #3	VOA	3,400
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

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NDRC LABORATORIES, INC
GC/MS QUANTITATION REPORT

EPA PRIORITY POLLUTANT SCAN
METHOD 8240: PURGEABLES
METHOD 8270: BASE/NEUTRAL - ACID EXTRACTABLES

DATE RECEIVED: 4-30-90

REPORT NUMBER: 90-11146
DATE: 5-18-90

SAMPLE SUBMITTED BY: Ecology and Environment, Inc
ADDRESS: 12021 Lakeland Park Blvd Suite 217
Baton Rouge, La. 70809
ATTENTION: Mr. Mark Ezell

SAMPLE DESCRIPTION: Sludge
IDENTIFYING MARKS: OD1010 Project TFA-K
Odessa Drum Site

NDRC LABORATORIES, INC.

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Report 90-11146

MASS SPECTROMETRY LABORATORY
GC/MS QUANTITATION REPORT

EPA METHOD 8240
PURGEABLE COMPOUNDS

PARAMETER	DETECTION ** LIMIT(μg/kg)		AMOUNT DETECTED(μg/kg)
Acrolein	20000	.....	< 20000
Acrylonitrile	20000	.....	< 20000
Benzene	10000	.....	< 10000
Bromoform	10000	.....	< 10000
Bromomethane	20000	.....	< 20000
Carbon tetrachloride	10000	.....	< 10000
Chlorobenzene	10000	.....	< 10000
Chlorodibromomethane	10000	.....	< 10000
2-Chloroethylvinyl ether	10000	.....	< 10000
Chloroethane	20000	.....	< 20000
Chloroform	10000	.....	< 10000
Chloromethane	20000	.....	< 20000
Dichlorobromomethane	10000	.....	< 10000
1,2-Dichlorobenzene	10000	.....	< 10000
1,3-Dichlorobenzene	10000	.....	< 10000
1,4-Dichlorobenzene	10000	.....	< 10000
1,1-Dichloroethane	10000	.....	< 10000
1,2-Dichloroethane	10000	.....	< 10000
1,1-Dichloroethene	10000	.....	< 10000
trans-1,2-Dichloroethene	10000	.....	< 10000
1,2-Dichloropropane	10000	.....	< 10000
cis-1,3-Dichloropropene	10000	.....	< 10000
trans-1,3-Dichloropropene	10000	.....	< 10000
Ethylbenzene	10000	.....	20200
Methylene chloride	20000	.....	< 20000
1,1,2,2-Tetrachloroethane	10000	.....	< 10000
Tetrachloroethene	10000	.....	< 10000
Toluene	10000	.....	46800
1,1,1-Trichloroethane	10000	.....	< 10000
1,1,2-Trichloroethane	10000	.....	< 10000
Trichloroethene	10000	.....	< 10000
Trichlorofluoromethane	20000	.....	< 20000
Vinyl chloride	20000	.....	< 20000

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GC/MS QUANTITATION REPORT

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)		AMOUNT DETECTED(µg/kg)
Acenaphthene........................	99000	.....	< 99000
Acenaphthylene......................	99000	.....	< 99000
Anthracene..........................	99000	.....	< 99000
Benzidine...........................	99000	.....	< 99000
Benzo(a)anthracene..................	99000	.....	< 99000
Benzo(b)fluoranthene................	99000	.....	< 99000
Benzo(k)fluoranthene................	99000	.....	< 99000
Benzo(a)pyrene......................	99000	.....	< 99000
Benzo(ghi)perylene..................	99000	.....	< 99000
Butyl benzyl phthalate..............	99000	.....	< 99000
4-Bromophenyl phenyl ether..........	99000	.....	< 99000
bis(2-Chloroethyl)ether.............	99000	.....	< 99000
bis(2-Chloroethoxy)methane..........	99000	.....	< 99000
bis(2-Ethylhexyl)phthalate..........	99000	.....	< 99000
bis(2-Chloroisopropyl)ether.........	99000	.....	< 99000
2-Chloronaphthalene.................	99000	.....	< 99000
4-Chlorophenyl phenyl ether.........	99000	.....	< 99000
Chrysene............................	99000	.....	< 99000
Dibenzo(a,h)anthracene..............	99000	.....	< 99000
di-n-Butylphthalate.................	99000	.....	< 99000
1,2-Dichlorobenzene.................	99000	.....	< 99000
1,3-Dichlorobenzene.................	99000	.....	< 99000
1,4-Dichlorobenzene.................	99000	.....	< 99000
3,3'-Dichlorobenzidine..............	195000	.....	< 195000
Diethylphthalate....................	99000	.....	< 99000
Dimethylphthalate...................	99000	.....	< 99000
2,4-Dinitrotoluene..................	99000	.....	< 99000
2,6-Dinitrololuene..................	99000	.....	< 99000
Di-n-Octylphthalate.................	99000	.....	< 99000
Fluoranthene........................	99000	.....	< 99000
Fluorene............................	99000	.....	< 99000
Hexachlorobenzene...................	99000	.....	< 99000
Hexachlorobutadiene.................	99000	.....	< 99000

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Report 90-11146

BASE/NEUTRAL-continued

Hexachlorocyclopentadiene...........	99000	.....	< 99000
Hexachloroethane....................	99000	.....	< 99000
Indeno(1,2,3-cd)pyrene..............	99000	.....	< 99000
Isophorone..........................	99000	.....	< 99000
Naphthalene.........................	99000	.....	210000
Nitrobenzene........................	99000	.....	< 99000
N-Nitrosodimethylamine..............	99000	.....	< 99000
N-Nitrosodiphenylamine..............	99000	.....	< 99000
N-Nitrosodi-n-propylamine...........	99000	.....	< 99000
Phenanthrene........................	99000	.....	< 99000
Pyrene..............................	99000	.....	< 99000
1,2,4-Trichlorobenzene..............	99000	.....	< 99000

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GC/MS QUANTITATION REPORT
ACID EXTRACTABLES

PARAMETER	DETECTION LIMIT(µg/kg)	AMOUNT DETECTED(µg/kg)
4-Chloro-3-methylphenol	99000	< 99000
2-Chlorophenol	99000	< 99000
2,4-Dichlorophenol	99000	< 99000
2,4-Dimethylphenol	99000	< 99000
2,4-Dinitrophenol	495000	< 495000
2-Methyl-4,6-dinitrophenol	99000	< 99000
2-Nitrophenol	99000	< 99000
4-Nitrophenol	495000	< 495000
Pentachlorophenol	495000	< 495000
Phenol	99000	< 99000
2,4,6-Trichlorophenol	99000	< 99000

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FORM 1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Contractor Name: NDRC Laboratories　　Project: ______
Sample Number: 11146　　Matrix: Sludge
Instrument ID: A　　Date Received: 04-30-90
Level: low　　Date Extracted: 05-04-90
Column: SP2100　　Date Analyzed: 05-16-90
pH: 12.1　　Dilution: 10

CAS #	COMPOUND	CONCENTRATION(ug/Kg)	Q
319-84-6	alpha-BHC	80	U
319-85-7	beta-BHC	80	U
319-86-8	delta-BHC	80	U
58-89-9	gamma-BHC(Lindane)	80	U
76-44-8	Heptachlor	80	U
309-00-2	Aldrin	80	U
1024-57-3	Heptachlor epoxide	80	U
959-98-8	Endosulfan I	80	U
60-57-1	Dieldrin	160	U
72-55-9	4,4'-DDE	160	U
72-20-8	Endrin	160	U
33213-65-9	Endosulfan II	160	U
72-54-8	4,4'-DDD	160	U
1031-07-8	Endosulfan sulfate	160	U
50-29-3	4,4'-DDT	160	U
72-43-5	Methoxychlor	800	U
53494-70-5	Endrin ketone	160	U
5103-71-9	alpha-Chlordane	800	U
5103-74-2	gamma-Chlordane	800	U
1601-35-2	Toxaphene	1600	U
12674-11-2	Arochlor-1016	800	U
11104-28-2	Arochlor-1221	800	U
11141-16-5	Arochlor-1232	800	U
53469-21-9	Arochlor-1242	800	U
12672-29-6	Arochlor-1248	800	U
11097-69-1	Arochlor-1254	800	U
11096-82-5	Arochlor-1260	800	U

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Report D90-11146

Tentatively Identified Compounds

	Compound	Fraction	Amount (µg/kg)
1.	2-Methyl Naphthalene	ABN	270,000
2.	1-Ethyl-2-Methyl Benzene	ABN	300,000
3.	1-Ethyl-3-Methyl Benzene	ABN	340,000
4.	1-Methyl-3-Propylbenzene	ABN	170,000
5.	1-Ethyl-2,3-Dimethylbenzene	ABN	150,000
6.	1,2,3,5-Tetramethyl Benzene	ABN	120,000
7.	1,2,3,4-Tetramethyl Benzene	ABN	140,000
8.	1-Methyl Naphthalene	ABN	180,000
9.	2-Ethenyl Naphthalene	ABN	230,000
10.	1,7-Dimethylnaphthalene	ABN	120,000
11.	1,2-Dimethylnaphthalene	ABN	130,000
12.	1-Dodecanol	ABN	120,000
13.	Unidentified Aliphatic Amine	ABN	380,000
14.	Unidentified Aliphatic Amine #2	ABN	200,000
15.	2-Dodecyloxy Ethanol	ABN	100,000
16.	Unidentified Aliphatic Amine #3	ABN	1,500,000
17.	Unidentified Cyclic Amine	ABN	150,000
18.	Unidentified Aliphatic Amine #4	ABN	480,000
19.	Unidentified Aliphatic Amine #5	ABN	190,000
20.	Xylenes	VOA	170,000

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Tentatively Identified Compounds

Compound		Fraction	Amount (µg/kg)
21.	An Ethyl Methyl Benzene	VOA	190,000
22.	Trimethyl Benzene #1	VOA	160,000
23.	Trimethyl Benzene #2	VOA	56,000
24.	Methylpropyl Benzene	VOA	69,000
25.	Dimethyl Ethyl Benzene #1	VOA	110,000
26.	Dimethyl Ethyl Benzene #2	VOA	75,000
27.	Dimethyl Ethyl Benzene #3	VOA	70,000
28.	Tetramethyl Benzene #1	VOA	71,000
29.	Tetramethyl Benzene #2	VOA	55,000
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

ATTACHMENT 2

DATA VALIDATION

There were no problems encountered validating this data.

TDD No. 06-9004-09

ATTACHMENT 3

QUALITY ASSURANCE SAMPLING PLAN

(~~72~~ pages)
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SAMPLING QA/QC PLAN

ODESSA DRUM COMPANY, INC. SITE

Prepared by
Ecology and Environment, Inc.
Technical Assistance Team - Region 6

EPA Project No:
Contractor Work Order: T06-9004-09
EPA Contract No: 68-01-7398

0

APPROVALS

Ecology and Environment, Inc.

Mark Ezell 4-24-90
Mark Ezell — Date
Project Manager

R S Pierce 4/24/90
R. Steve Pierce — Date
Project Director

EPA

Gregory E. Fife 4/24/90
Greg Fife — Date
On-Scene Coordinator

Table of Contents

1.0 BACKGROUND

See pages 3A - 3E attached.
Site sketch Figure 1.1 page 4.

2.0 OBJECTIVES

The objectives of this sampling mission are to determine the presence and type of contamination to evaluate the potential for immediate removal. Drum, tank, and soil samples will be taken to assess the extent and impact of contamination on the site and surrounding area.

Site samples will be taken and analyzed for the purpose of:

- Preliminary site characterization
- Risk assessment
- Removal Potential
- Compatibility

The data will be evaluated against:

- Federal/state action levels identified by EPA and ATSDR

3.0 QUALITY ASSURANCE OBJECTIVES

As identified in Sections 1.0 and 2.0 the object of this project applies to the following parameters:

PARAMETERS	MATRIX	INTENDED USE OF DATA	QA LEVEL
HAZARD CATEGORIZATION			
Corrosivity Flammability H_2O Reactivity Solubility Cyanide Sulfide Hydrocarbons Halogens Oxidizers Specific Gravity	Drum/ Tank Contents	Sample Screening	QA-1
AIR MONITORING			
Photoionizable vapors Organic vapors Explosimeter	Ambient Air/ Headspace	Field Screening	QA-1

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : Files DATE: July 6, 1989

THRU : Ernest W. Heyer, Chief, Program Services Unit, Field Operations Division

FROM : Terry James, District 10 - Odessa, Field Operations Division

SUBJECT: Odessa Drum Company, Incorporated, Solid Waste Registration No. 31481, Follow-Up Inspection, June 7, 1989

I. Introduction

A. Inspection Background

The following participants were present during the inspection: 1) Terry James, Field Investigator, District 10; 2) Richard Wilson, acting Plant Manager, Odessa Drum; 3) Sherrill Brown, Plant Supervisor, Odessa Drum and Oscar Torres, Shop Foreman, Odessa Drum. The site inspection and review of records was conducted from June 7, 1989 to June 16, 1989. The site is located in northwest Odessa at 2214 Alice Street.

B. General Facility and Waste Process Information

Odessa Drum Company, Incorporated is an industrial drum recycler. The company receives waste chemical drums from local industries such as oilfield service companies. The drums are drained, cleaned internally and externally, integrity tested, painted and sold as chemical drums. The drums that do not pass the integrity tests are either sold as trash barrels or sent to a shredder and metal reclaimer. Odessa Drum Company also accepts waste drums from companys for cleaning and off-site disposal. The bad metal drums are sent to a shredder and metal reclaimed while the bad plastic drums are kept on-site until sold for trash drums or boat dock floats. Odessa Drum Company uses a caustic internal/external rinse and a phosphoric acid rinse in their process. During the rinsing procedure, the rinsate becomes contaminated with chemical residues from the drums. The rinsewater must be changed on a frequency that is related to the volume of drums cleaned. A review of the companys waste management records indicates the company generates approximately 5,000 gallons of waste rinsate water monthly. Recent and historical laboratory analysis indicates that the waste rinsate water is periodically hazardous for corrosivity and flashpoint and is consistently hazardous for EP Toxic metals (See Attached Analysis). The company stores the waste rinsate water on-site in tanks or drums at numerous storage sites. The company then attempts to separate the oil from the water in an effort to reuse some of the water. The separated oil and water are stored in either containers or tanks prior to off-site shipment. Since February 1989 to the first week of June 1989, company records indicate that 38,350 gallons of waste was generated. Of that amount 12,535 gallons of waste was disposed of. Company records indicate that of the amount disposed 2,750 gallons was waste rinsate water, however, the company could not produce any manifests to document the disposal. An on-site inventory of the raw waste rinsate water and processed wastewater and oil currently stored on-site is approximately 81,390 gallons which is stored in four tanks and 1,367 fifty-five gallon drums indicating that at least 43,040 gallons was generated and stored on-site prior to February 1989. The company also generated a sludge from the drum rinsing tanks and a recent analysis of this waste indicates a low flashpoint (98 F) and EP Toxic concentrations of metals. Paint chips from drums and from the paint booth are also generated. Recent company analysis reveals nonhazardous levels of EP Toxic metals from the drum paint chips while the paint booth paint chips (Black Granular) revealed hazardous concentrations of EP Toxic metals. The company also generates miscellaneous plant trash that is stored in containers prior to off-site disposal. There are also numerous containers of unknown waste materials stored on-site. Samples of the waste rinsate water have been collected by the investigator and sent to the TDH Laboratory in Austin for analysis. As of the date of this memo, the analytical results are pending.

C. Surrounding Land Use

The site is located outside of the Odessa City Limits to the northwest in Ector County. The company site is surrounded by a residential neighborhood. Drum Storage Area A3 is located within three feet of a residential backyard with several children playing in the backyard. There were several releases documented from storage site A3 during the inspection. There were numerous areas of 335.4 and Chapter 26.121 violations occurring throughout the plant site. Stormwater run-off from the west and south portion of the facility exit the property on the west and south side of the facility into a roadside barrow ditch. Stormwater run-off from the east side of the facility drains in a diffused pattern to a paved road on the east side of the facility. The underlying aquifer is the Trinity Edwards in which the company and all surrounding residents acquire their water. The exact depth and groundwater direction at the facility is unknown, however, in most areas of the immediate region the groundwater is approximately 80' to 120' feet in depth and flows in a southeast direction.

D. Background

The following is a compliance history of the facility since December 17, 1985 to present.

December 17, 1985 - An inspection of records of Odessa Drum revealed that Odessa Drum was shipping waste off-site to RRC jurisdiction injection wells and disposal pits. Odessa Drum was documenting the shipment as "Empty Barrels" when in fact they were bulk loads of wastes, whereas, 1

"Empty Barrel" was equivalent to 1 barrel of waste. Of the 2,520 barrels of waste disposed of 625 barrels are still unaccounted for and the disposal site is unknown. The material that was disposed of is the drum rinsate water that has been shown to be characteristically hazardous and contains elevated levels of EP Toxic metals.

February 18, 1986 - District 10 refers the case to Austin for formal Enforcement Action.

April 3, 1986 - TWC analysis of the waste drum rinsate water stored in tank no. 3 revealed a flashpoint of 45 C and a pH of 13.2 S.U.

April 17, 1986 - Documents were obtained from Proler International in Vinton, Texas near El Paso showing that Odessa Drum had received waste caustic from Proler International at $1.00 a load. Two loads were received with a total of 94,980 lbs of caustic being delivered to Odessa Drum for $2.00.

November 7, 1986 - TWC District 10 representatives conducted an industrial solid waste compliance inspection of the company. An NOV was issued to the company on December 4, 1986 for violations of TAC 335.62 and 335.6.

June 16, 1987 - Second notice of noncompliance was sent to the Company for the November 7, 1986 industrial solid waste inspection.

November 29, 1988 - The investigator conducted an industrial solid waste compliance inspection of the facility. Numerous TAC violations were documented (See memo dated December 19, 1988).

December 19, 1988 - An NOV is sent to Odessa Drum Company concerning violations documented during the November 29,1989 inspection.

January 17, 1989 - NOV response letter is received from the Company (See Attached Copy).

June 7, 1989 - Follow-Up Inspection

II. Summary of Alleged Violations

1. TAC 335.62 - Hazardous Waste Determination

Liquid wastes (rinsate) after oil/water separation and numerous unidentified wastes.

2. TAC 335.6 - Notification Requirements - Waste Streams

See attached revised industrial solid waste registration No. 31481.

3C

3. TAC 335.6 - Notification Requirements - Waste Management

See attached revised industrial solid waste registration No. 31481.

4. TAC 335.4/Chapter 26.121 - General Prohibitions

Numerous waste discharges or potential discharges (See Comments in Generators Checklist).

5. TAC 335.13(b) - Recordkeeping and Reporting

Failure to prepare a monthly summary.

6. TAC 335.9(a)(1) - Recordkeeping

See Generators Comments.

7. TAC 335.69(A)(1)(2)(3);(b) - Accumulation Time

Container storage areas not complying with TAC 335.112(A)(8), no date clearly marked on containers, not labelled "hazardous waste" and wastes are stored on-site for longer than 90 days.

8. TAC 335.69(d) - Accumulation Time

Violation of 40 CFR 265.173 - Container Management. The drum of the satellite accumulation area for drum drainings is an open top drum that is not sealed while storing wastes.

9. TAC 335.6(a) - Notification Requirements

Failure to notify the TWC of the closure of two underground waste tanks located at the facility.

10. TAC 335.112(a)(1) - Personnel Training

The program is deficient in the requirements of 40 CFR 265.16(a)(3)(III)(IV)(VI).

11. TAC 335.112(a)(2) - Preparedness and Prevention

Lack of fire, spill control, and decontamination equipment, adequate fire water supply, aisle space, and notify local authorities.

12. TAC 335.112(a)(3) - Contingency Plan

Lack of evacuation plans as required by 40 CFR 265.52(f).

3D

13. TAC 335.112(a)(8) - Container Management

Containers not in good shape, not closed or inspected and storing ignitable wastes within 15 meters from the facility's property line.

14. TAC 335.122(a)(9) - Tanks Management

40 CFR 265.191(a) - Assessment of Tank Integrity.

15. TAC 335.122(a)(9) - Tanks Management

40 CFR 265.192 - New Tank Systems

16. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.193 - Containment and Detection of Releases

17. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.194 - General Operating Requirements

18. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.195 - Tank Inspections

19. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.196 - Response to Leaks or Spills

20. TAC 335.122(a)(9) - Tanks Management

40 CFR 265.198 - Special Requirements for Ignitable or Reactive Wastes

The only violation resolved from the November 29, 1988 inspection and December 19, 1988 NOV was the TAC 335.62 violation for Hazardous Waste Determination.

III. Other Areas of Concern

Photos of recent plant operations are included with the inspection report as well as present and past waste analysis. District 10 is submitting this report to the Hazardous and Solid Waste Enforcement Section for escalated enforcement action to be considered as a high priority violator.

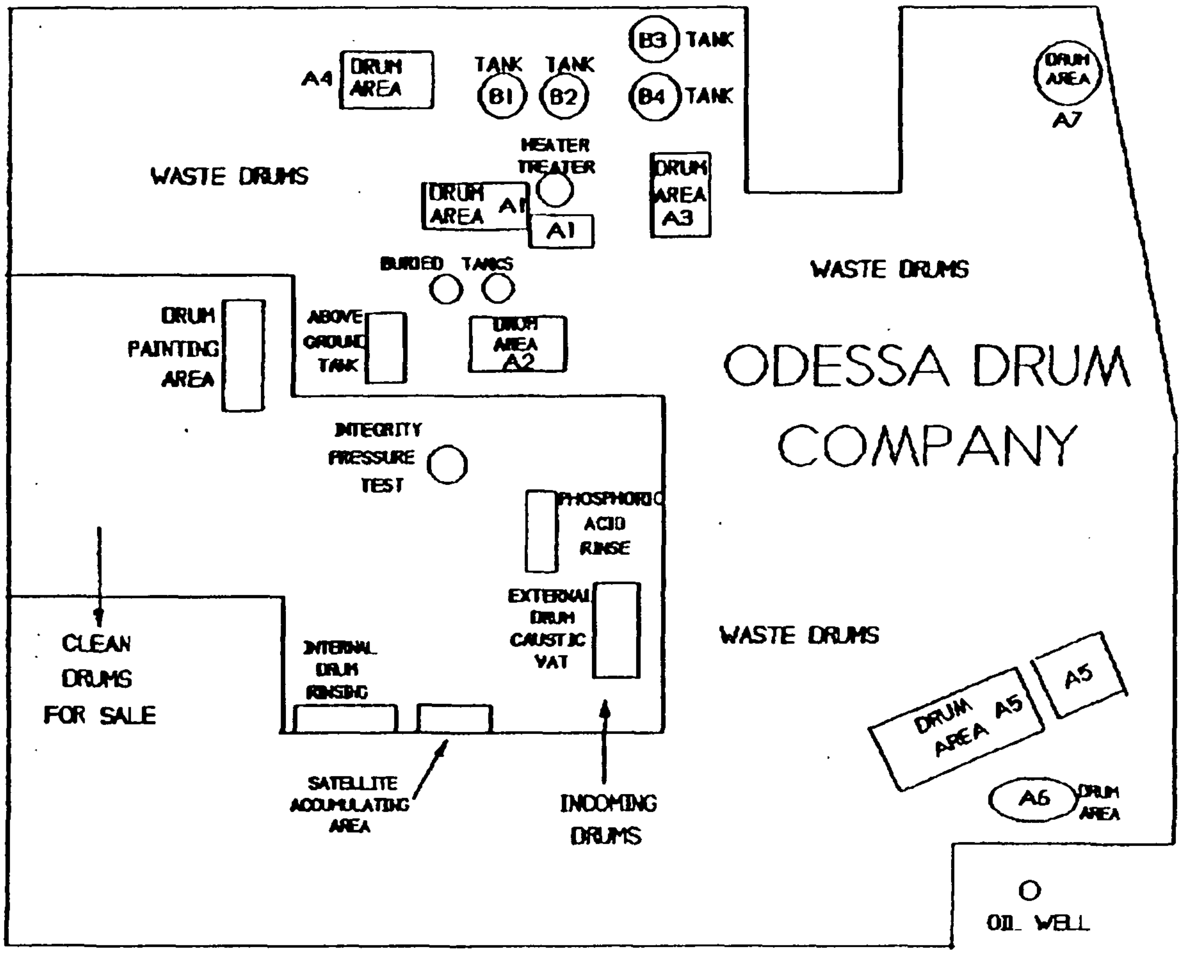
This is submitted for information only.

Terry James

William F. Lockey,
District Manager

3E

Figure 1.1 Site Sketch



PARAMETERS	MATRIX	INTENDED USE OF DATA	QA LEVEL
SAMPLE ANALYSIS			
Semi-volatile organics PCB/Pesticides EP Toxicity metals Volatile organics RCRA Ignitability RCRA pH RCRA Cyanide RCRA Sulfide	Soil and Drum/ Tank Contents	Characterization	QA-2

For QA-1 and modified QA-2 data, results will be representative, comparable, and complete.

For QA-1 data, results may be non-qualitative to semi-qualitative, non-definitive (without confirmed) identification, in addition, they may have gross quantitation and no confidence limits.

Possible instruments and methods to be employed during QA-1 include:

- Spot tests
  - Indicator tubes
  - Paper strip tests
  - Chlorin Oil
  - Chemical reactions producing colors, gases, or precipitates
- HNU P1-101 Photo Ionization Detector
- Century 128 GC Organic Vapor Analyzer
- MSA O2/Explosimeter Model 260

For Modified QA-2 data, verification of preliminary screening results will be achieved by :

Definitive quantitation - On at least 10% of the samples collected, analyte quantitation will be verified by alternate method or repeat of preliminary procedure; and determination of precision, accuracy, and confidence limits will be made on at least 1% of the samples collected using the verification method. (This is the only verification option for inorganic parameters). Matrix spike/matrix spike duplicate (MS/MSD) on 10% of the samples or 2 pairs, whichever is greater.

For Modified QA-2 data, methods for confirmed identification on organics and inorganics include:

Atomic Absorption
Inductively Coupled Argon Plasma
Gas Chromatography/Mass Spectrometry
Colorimetric Analysis

4.0 APPROACH AND SAMPLING METHODOLOGIES

4.1 Media/Matrix

This event involves the assessment of the following media/matrix:

Drum/Tank contents
Soil/Sediment

4.2 Sampling Equipment

The following equipment will be utilized to obtain environmental samples from the respective media/matrix:

Matrix/Media	Sampling Equipment	Fabrication	Dedicated
Drum liquid	Thieving Tube or Coliwasa	Boro Silicate Glass	Yes
Drum Solid or Soil/sediment	Spoon and/or Trowel	Stainless Steel	Yes
Tank liquid	Thieving Tube or Coliwasa	Boro Silicate Glass	Yes
Tank Sludge	Sludge Sampler	Polyurethane	Yes
Tank liquid	Bailer	Teflon	No
Tank Sludge	Slam Bar	Steel	No
Tank Sludge	Slam Bar Sleeve	Polyurethane	Yes
Tank Sludge	Soil Auger	Steel	No
Tank Sludge	Eckman Dredge	Steel	No

Note: Due to the plastic fabrication of the slam bar sleeves, sludge sampler, and PVC pipe, potential exists for phthalate contamination which may be detected in the BNA analysis.

4.2.1 Sampling Equipment Decontamination

The glass thieving tubes, slam bar sleeves, sludge samplers, and stainless steel spoons and/or trowels will be dedicated and therefore no decontamination procedure is required. Sample jars will be placed in plastic bags before being filled with sample material. After removal of the plastic bag, decontamination of the outside of the sample jars will be employed in the following sequence:

Physical removal
Detergent wash with Trisodium Phosphate
Potable water rinse
Distilled water rinse

Non-dedicated equipment will be decontaminated in the following sequence:

Physical removal
Detergent wash or hexane rinse
Potable water rinse
Distilled water rinse

4.3 Sampling Design

During the initial site entry air monitoring will be performed to characterize ambient air conditions. The site containers, including vats, tanks, fractionation tanks, and drums will be assessed for number, sizes, types, structural integrity, distribution, and signs of stress. Based on the initial findings and subsequent sampling entries, the containers will be inventoried to note exterior labels, estimated volume of contents, and air monitoring data. Information pertinent to container classification will be recorded in the field logbook.

Sample numbers will be assigned by spray painting the appropriate number directly on the side and top of the containers.

The drums and tanks will be opened manually using non-sparking tools such as a bung or crescent wrench. After the drum has been opened, preliminary monitoring of headspace gases will be performed using an explosimeter, organic vapor analyzer (OVA), and photoionization detector (PID). If significant readings are obtained, drums will be allowed to vent for a period of time prior to sampling if this is not deemed to increase hazards.

Samples to be taken include:

50-60 drum grab samples
7 tank grab samples
1 composite soil sample

Care will be taken that the sample represents the entire depth of the container and a check will be made for the presence of a bottom sludge.

Following collection of the set of samples, a limited hazard categorization will be conducted using approximately 5 ml of each sample. Following hazard categorization, the samples will be placed into similar hazard classes and composited. The following samples will be shipped to the selected laboratory.

5-7 drum samples (composite and/or grab)
2-3 tank samples (composite and/or grab)
1 composite soil sample

The sampling locations will be depicted on the attached Sample Location Map (Figure 4.1).

4.4 Standard Operating Procedures

The drum, tank, and soil sampling methodologies referenced in this plan are consitent with the EPA ERT SOPs attached as Appendices A, B, and C.

4.4.1 Sample Documentation

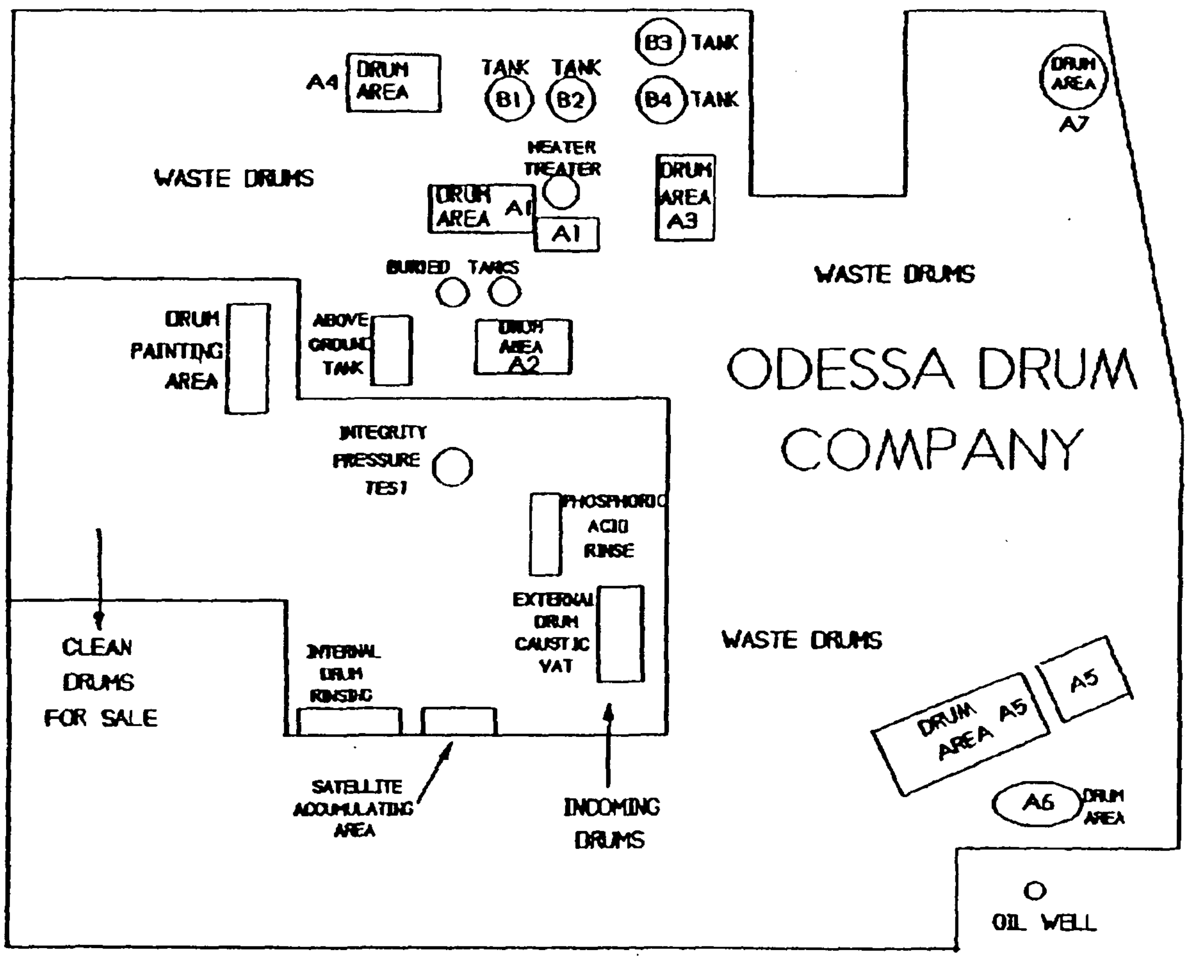
All sample documents must be completed legibly, in ink. Any corrections or revisions must be made by lining through the incorrect entry and by initialing the error.

1. Field Log Book

The field log book is essentially a descriptive notebook detaining site activities and observations so that an accurate account of field procedures can be reconstructed in the writer's absence. The Ecology and Environment, Inc. (E&E) Logbook SOP (Gentech 4.1) will be followed. All entries should be dated and signed by the the individual making the entries, and should include (at a minimum) the following:

1. Site name and project number.
2. Proposed work and objectives of mission.
3. Name(s) of on-site personnel and responsibilities.
4. Additional subcontractor information and names of on-site personnel.
5. Dates and times of all entries (military time preferred)
6. Descriptions of all site activities, including entry and exit times.
7. Noteworthy events and discussions.
8. Weather conditions.
9. Site observations.
10. Identification and description of samples, matrices and locations.

Figure 4.1 Sample Location Map



11. Date and time of sample collections, along with chain-of-custody information.
12. Record of photographs.
13. Site sketches.
14. Site safety information, including site safety meetings and levels of protection.
15. Equipment inventory and calibrations.

2. Sample Labels

Sample labels must clearly identify the particular sample, and should include the following:

1. Site name and number.
2. Time sample was taken.
3. Sample preservation.
4. Initials of sampler(s).
5. Analysis requested.
6. Sample location.

Sample labels must be securely affixed to the sample container. Tie-on labels can be used if properly secured.

3. Chain-of-Custody Record

A Chain-of-Custody record must be maintained from the time the sample is taken to its final deposition. Every transfer of custody must be noted and signed for, and a copy of this record kept by each individual who has signed. When samples (or groups of samples) are not under direct control of the individual responsible for them, they must be stored in a locked container with a Chain-of-Custody seal.

The Standard Chain of Custody form should include (at miniumum) the following:

1. Sample idenification number.
2. Sample information.
3. Sample location.
4. Sample date.
5. Name(s) and signature(s) of sampler(s).
6. Signature(s) of any individual(s) with control over samples.
7. Airbill and shipping paper numbers.

4. Chain-of-Custody Seals

Chain-of-Custody Seals demonstrate that a sample container has not been tampered with, or opened.

The individual in possession of the sample(s) must sign and date the seal, affixing it in such a manner that the container cannot be opened without breaking the seal. The name of this individual, along with a description of the sample packaging, must be noted in the Field Logbook.

5. Corrective Action

Corrective actions are those taken in response to nonconformance reports, audit findings, or surveillance findings. The quality assurance representative is responsible for reviewing audit reports and nonconformance reports to determine the significant or repetitious conditions adverse to quality, or failure to implement or adhere to required quality assurance practices. When such problems are identified, the responsible manager must investigate the causes of the problems and define and implement the necessary actions to correct the problems. Documentation that supports major corrective actions must be maintained in the project files.

4.4.2 Sampling

Drum Sampling

(See Attachment A - Drum Sampling SOP)

Tank Sampling

(See Attachment B - Tank Sampling SOP)

Soil Sampling

(See Attachment C - Soil Sampling SOP)

4.4.3 Sample Handling and Shipment

Each of the glass 8 oz. sample jars will be sealed and labeled according to the following protocol. Container labels will be securely affixed to individual containers and will contain all required information including sample number, time and date of collection, analyses requested, and preservation used. Caps will be secured with tape and with individual custody seals. Sample bottles will be placed in sealed plastic bags and then packed in paint cans with absorbent material (vermiculite) to prevent spillage. Sealed paint cans will be placed in large metal or plastic coolers, and padded with additional absorbent material.

All sample documents will be affixed to the underside of each cooler lid. The lid will be sealed and affixed on at least two sides with EPA custody seals so that any sign of tampering is easily visible.

4.5 Schedule of Activities

(See Table 1 atttached, page 12A)

5.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

The EPA On-Scene Coordinator, Greg Fife, will provide overall direction to TAT Ecology and Environment, Inc. staff concerning project sampling needs, objectives, and schedule.

The TAT Project Manager, Mark Ezell, is the primary point of contact with the EPA On-Scene Coordinator. The Project Manager is responsible for project team organization and supervision of all tasks, including reporting and deliverables. In addition, he is responsible for ensuring field adherence to the Sampling QA/QC Plan and recording any deviations.

Personnel	Responsibilities
Mark Ezell	Project Manager
James Dellinger	Site Safety Officer
Ray E. Ferrell	QA/QC, Sampler
R. Steve Pierce	Sampler, Team Member

The TAT Project Director, R. Steve Pierce, is responsible for providing administrative and technical guidance to the Project Manager and team, auditing field activities, reviewing the technical deliverables, and proposing corrective actions, as necessary.

The TAT Quality Assurance Officer, Sherri Hughes, and Regional Safety Officer, Maxine LaPierre, are responsible for auditing and guiding the project team, reviewing plans, and proposing corrective actions, if necessary, for nonconformity to the Sampling QA/QC Plan or Site Safety Plan.

The following laboratories will be providing the following analyses:

Lab Name/Location	Lab Type	Parameters	Method
	Commercial	Volatile Orgainics	SW-846/8240
		Semi-Volatile Organics	SW-846/8270
		EP Toxicity Metals	SW-846/1310 and 6010
		RCRA Ignitability	SW-846/1010
		RCRA pH	SW-846/9045
		RCRA Cyanide	SW-846/9010
		RCRA Sulfide	SW-846/9030
		PCB/Pesticides	SW-846/608 or 8080

Table 1: Proposed Schedule of Activities

Activity	Time Period
1. Laboratory Procurement	4-16-90/4-18-90
2. Meet with OSC and Texas Water Commision Site Reconnaissance	4-24-90
3. Sampling - Drums, Tanks, Soil	4-25-90/4-26-90
4. Laboratory Analysis	4-27-90/5-7-90
5. Data Validation	5-7-90/5-11/90
6. Final Report	
7.	
8.	
9.	

6.0 QUALITY ASSURANCE REQUIREMENTS

The following requirements apply to the respective QA Objectives and parameters identified in Section 3.0.

The following QA protocols apply:

For QA-1 data

Instrumentation calibration and/or performance check of the given test methods will be documented on data sheets or in the log notebook. Calibration of QA-1 instruments will be performed according to Tables 2-4.

Instrument response will vary with different chemical vapors present; however, due to the unknown nature of the vapors present, specific detection limits can not be determined.

Sample documentation will be performed utilizing sample data sheets with significant readings recorded in the Field Logbook.

Note: QC procedures prescribed in SOPs and methods must be followed.

For QA-2 data

Adherence to proper sample documentation, sample holding times, and chain-of-custody procedures (See appropriate SOP and/or Table 3).

Definitive identification: confirm the identification of analytes via a second GC column or mass spectra on 10% of the samples collected (for organics only); and provide gas chromatograms and/or mass spectra.

Definitive quantitation: verify preliminary quantitative results by reanalyzing 10% of the samples collected and make a determination of precision, accuracy, and confidence limits* by preparing and analyzing 10% or a minimum of 2 pairs of matrix spike duplicates (whichever is greater) on the samples verified. Note: if the preliminary method is a field screening procedure, an alternate, EPA-approved analytical method must be used to verify quantitative results.

Documentation of initial and continuing calibration.

Determination of detection limits will be determined by the selected laboratory.

*Data Validation protocols for determining precision, accuracy, and confidence limits are described in OSWER Directive 9360.4-01.

Table 2

MONTH ____________ 19___

HNU PI-101

MONTHLY CALIBRATION AND MAINTENANCE

RECORD

INSTRUMENT I.D. ______________

MAINTENANCE

Check UV light source window. If it is dirty clean as per Addendum A of HNU Manual. ______

Discharge Battery overnight ______

Charge Battery Hrs. ______ ______

Note: Do not charge over 14 hours, 3 hrs to 90% charge.

Clean exterior with detergent ______

CALIBRATION 10.2 eV Probe Probe I.D. ______

Initial background reading before calibration ______

Initial Span Setting ______

Calibration gas laboratory reference number ______

Calibration Gas Type ISOBUTYLENE

Calibration Gas Concentration ______

Instrument reading on calibration gas before adjustment ______

Check calibration and adjust as per HNU Manual, page 19 as required ______

Final Span Setting ______

CALIBRATION 11.7 eV Probe Probe I.D. ______

Initial background reading before calibration ______

Initial Span Setting ______

Calibration gas laboratory reference number ______

Calibration Gas Type ______

Calibration Gas Concentration ______

Instrument reading on calibration gas before adjustment ______

Check calibration and adjust as per HNU Manual, page 19 as required ______

Final Span Setting ______

NOTES: ______________________________

____

MAINTENANCE BY: ______________ DATE: ______________

Field Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

Field Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

Field Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

Field Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

Field Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

Field Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

Fi Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

d Check By: ______ Date: ______ Gas Conc. ______ 10.2 Span ______ 11.7 Span ______

Table 3

OVA-128

MONTHLY CALIBRATION AND MAINTENANCE
RECORD

MAINTENANCE — Instrument I.D. ____________

Check and clean primary filter if necessary ____________
Check and clean particulate filter in Pick Up Fixture ____________
Exhaust Flame Arrestor and Combustion Chamber Check ____________
Check valves for leaks using Leak-Tec or soap solution ____________
Check for air leaks-cover the end of the pickup probe with your finger and observe that the ball in the flow gauge goes to the botton. ____________
Check hydrogen fuel supply and if it is below 500 psi supplement hydrogen supply ____________
Clean the exterior components of the instrument with detergent ____________
Check that pressure gauges operate properly ____________
Indicate damage to the instrument ____________ ____________
Check battery and charge if necessary. Note: the charger may be left on continuously without damaging the battery. ____________

CALIBRATION

Initial Background Reading ____________
Initial Span Setting ____________
Reading before adjustment ____________
Calibration Gas Lab Ref. ____________
Cal. Gas Concentration ____________
Cal. Gas Type METHANE

Check Calibration and adjust as per Manual Section 4.2.1 as required ____________
Check Range (Bias) adjustment and adjust as necessary as per Manual Section 4.2.2 ____________
Was internal calibration or range adjustment required ____________
Final Span Setting ____________
Check strip chart calibration and adjust as necessary ____________

MAINTENANCE BY: ____________ DATE: ____________

Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________
Field Check By: ____________	Date: ________	Gas Conc. ________	Span ________

Table 4

MONTHLY MAINTENANCE RECORD &
CALIBRATION LOG FOR MSA MODEL 260
COMBUSTIBLE GAS AND
OXYGEN ALARM METER

Month__________ 19____

I.D. __________________

Clean the exterior with mild detergent ________
Note instrument condition ______________________ ________
Check Charge on Battery Level ______ ________
Check the oxygen alarms. Alarm levels are 19.5 and 25 percent ________
Check explosimeter alarm. Alarm level is 25 percent of LEL ________
Check instrument reading using calibration gas (PENTANE) ________
If calibrating with pentane at .75 percent the meter should read between 48-58 percent LEL. If the reading is not within these limits calibrate as per standard procedures. ________
Check internal flow system for leaks by covering the sample inlet. Flow indicator should stop moving up and down in its chamber. Notes______________________________ ________

Maintenance By: ____________________ Date:__________

Field Check By: ____________________ Date: __________ O2 ______ LEL ________
Field Check By: ____________________ Date: __________ O2 ______ LEL ________
Field Check By: ____________________ Date: __________ O2 ______ LEL ________
Field Check By: ____________________ Date: __________ O2 ______ LEL ________

COMMENTS: ____

7.0 DELIVERABLES

All project deliverables will receive an internal peer review prior to release, as per guidelines established in the (EPA Regional/Branch or Contractor) Quality Assurance Program Plan.

The TAT Project Manager, Mark Ezell, will maintain contact with the EPA On-Scene Coordinator, Greg Fife, to keep him informed about the technical and financial progress of this project. This communication will commence with the issuance of the work assignment. Activities under this project will be reported in status reports and other deliverables (e.g. analytical reports, POLREPS, final reports) described herein. Activities will also be summarized in appropriate format for inclusion in monthly and annual reports.

The following deliverables will be provided under this project:

Photodocumentation

Photodocumentation will be performed during all site activities to accurately record notable events occuring during the site assessment and sampling missions.

Pollution Reports

Pollution Reports (POLREPs) will be prepared to provide a detailed accounting of what has occurred, and what is planned to occur for the sampling event. Information will be provided on time and date of major events and personnel on-site.

Analytical Data Package

The sampling event requires analytical services. Documentation of laboratory selection, raw data, or results will be provided in the analytical report.

Data Review

A review of the data generated under this plan will be undertaken. The assessment of data acceptability or usability will be provided separately, or as part of the analytical report.

Final Report

A final report will be prepared to correlate available background information with data generated under this sampling event and identify supportable conclusions and recommendations which satisfy the objectives of this Sampling QA/QC Plan.

ATTACHMENT A

EPA ERT Drum Sampling SOP

(11 pages)

DRUM SAMPLING

TABLE OF CONTENTS

DRUM SAMPLING

1.0 SCOPE AND APPLICATION

The purpose of this procedure is to provide technical guidance on implementing safe and cost-effective response actions applicable to hazardous waste sites containing drums. Container contents are sampled and characterized for disposal, bulking, recycling, grouping, and/or classification purposes.

2.0 METHOD SUMMARY

Prior to sampling, drums must be inventoried, staged, and opened. Inventory entails recording visual qualities of each drum and any characteristics pertinent to the contents' classification. Staging involves the organization, and sometimes consolidation of drums which have similar wastes or characteristics. Opening of closed drums can be performed manually or remotely. Remote drum opening is recommended for worker safety. The most widely used method of sampling a drum involves the use of a glass thief. This method is quick, simple, relatively inexpensive, and requires no decontamination.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

- No preservatives shall be added to the sample. See EPA/REAC SOP# 2003 on proper sample containers for wastes encountered.
- Place sample container in two ziplock plastic bags.
- Place each bagged container in a 1-gallon covered can containing absorbent packing material. Place lid on can.
- Mark the sample identification number on the outside of the can.
- Place the marked cans in a cooler and fill remaining space with absorbent packing material.
- Fill out chain of custody record for each cooler, place in plastic, and affix to inside lid of cooler.
- Secure and custody seal the lid of the cooler.
- Arrange for the appropriate transportation mode consistent with the type of hazardous waste involved.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

The practice of tapping drums to determine their contents is neither safe nor effective and should not be used if the drums are visually over pressurized or if shock-sensitive materials are suspected.

Drums that have been overpressurized to the extent that the head is swollen several inches above the level of the chime should not be moved. A number of devices have been developed for venting critically swollen drums. One method that has proven to be effective is a tube and spear device. A light aluminum tube (3 meters long) is positioned at the vapor space of the drum. A rigid, hooking device attached to the tube goes over the chime and holds the tube securely in place. The spear is inserted in the tube and positioned against the drum wall. A sharp blow on the end of the spear drives the sharpened tip through the drum and the gas vents along the grooves. The venting should be done from behind a wall or barricade. This device could be cheaply and easily designed and constructed where needed. Once the pressure has been relieved, the bung can be removed and the drum sampled.

5.0 EQUIPMENT/APPARATUS

The following are standard materials and equipment required for sampling:

- Health and Safety Plan.
- Personnel protection equipment.
- Wide-mouth glass jars with teflon cap liner, approx. 500 ml volume.
- Uniquely numbered sample identification labels with corresponding data sheets.
- One-gallon covered cans half-filled with absorbent.
- Chain of custody sheets.
- Decontamination plan and materials.
- Glass thieving tubes or COLIWASA
- Drum opening devices:

A common method for opening drums manually is using a universal bung wrench (Appendix B1). These wrenches have fittings made to remove nearly all commonly encountered bungs. They are usually constructed of cast iron, brass, or a bronze-beryllium, non-sparking alloy formulated to reduce the likelihood of sparks. The use of a "NON-SPARKING" wrench does not completely eliminate the possibility of a spark being produced.

One means by which a drum can be opened manually when a bung is not removable with a bung wrench is by using a drum deheader (Appendix B2). This tool is constructed of forged steel with an alloy steel blade and is designed to cut the lid of a drum off or part way off by means of a scissors-like cutting action. A limitation of this device is that it can be attached only to closed head drums. Drums with removable heads must be opened by other means.

These tools (Appendix B3) are usually constructed of brass or a non-sparking alloy with a sharpened point that can penetrate the drum lid or head when the tool is swung. The hand picks or pickaxes that are most commonly used are commercially available; whereas, the spikes are generally uniquely fabricated four foot long poles with a pointed end.

The most common means used to open drums remotely for sampling is the use of a metal spike attached or welded to a backhoe bucket (Appendix B4). In addition to being very efficient, this method can greatly reduce the likelihood of personnel exposure.

Recently, remotely operated hydraulic devices (Appendix B5) have been fabricated to open drums remotely. One such device is discussed here. This device uses hydraulic pressure to pierce through the wall of a drum. It consists of a manually operated pump which pressurize soil through a length of hydraulic line.

A pneumatic bung remover (Appendix B6) consists of a compressed air supply that is controlled by a heavy-duty, 2-stage regulator. A high pressure air line of desired length delivers compressed air to a pneumatic drill, which is adapted to turn a bung fitting selected to fit the bung to be removed. An adjustable bracketing system has been designed to position and align the pneumatic drill over the bung. This bracketing system must be attached to the drum before the drill can be operated. Once the bung has been loosened, the bracketing system must be removed before the drum can be sampled. This remote bung opener does not permit the slow venting of the container, and therefore appropriate precautions must be taken. It also requires the container to be upright and relatively level. Bungs that are rusted shut cannot be removed with this device.

6.0 REAGENTS

Decontamination of sampling equipment should follow Equipment Decontamination EPA/REAC Standard Operating Procedure #2006 and site specific work plan.

7.0 PROCEDURE

7.1 Drum Staging

Prior to sampling, the drums should be staged to allow easy access. Ideally, the staging area should be located just far enough from the drum opening area to prevent a chain reaction if one drum should explode or catch fire when opened.

During staging, the drums should be physically separated into the following categories: those containing liquids, those containing solids, lab packs, gas cylinders, and those which are empty. This is done because the strategy for sampling and handling drums/containers in each of these categories will be different. This may be achieved by:

- Visual inspection of the drum and its labels, codes, etc. Solids and sludges are typically disposed of in open top drums. Closed head drums with a bung opening generally contain liquid.
- Visual inspection of the contents of the drum during sampling, followed by restaging, if needed.

Once a drum has been excavated and any immediate hazard has been eliminated by overpacking or transferring the drum's contents, the drum is affixed with a numbered tag and transferred to a staging area. Color-coded tags, labels or bands should be used to mark similar waste types. A description of each drum, it's condition, any unusual markings, and the location where it was buried or stored are recorded on a drum data sheet (Appendix A). This data sheet becomes the principal recordkeeping tool for tracking the drum onsite.

Where there is good reason to suspect that drums containing radioactive, explosive, and shock-sensitive materials are present, these materials should be staged in a separate, isolated area. Placement of explosives and shock-sensitive materials in diked and fenced areas will minimize the hazard and the adverse effects of any premature detonation of explosives.

Where space allows, the drum opening area should be physically separated from the drum removal and drum staging operations. Drums are moved from the staging area to the drum opening area one at a time using forklift trucks equipped with drum grabbers or a barrel grappler. In a large-scale drum handling operation, drums may be conveyed to the drum opening area using a roller conveyor.

7.2 Drum Opening

There are three basic techniques available for opening drums at hazardous waste sites:

- Manual opening with nonsparking bung wrenches
- Drum deheading
- Remote drum puncturing or bung removal.

The choice of drum opening techniques and accessories depends on the number of drums to be opened, their waste contents, and physical condition. Remote drum opening equipment should always be considered in order to protect worker safety. Under OSHA 1910.120, manual drum opening with bung wrenches or deheaders should be performed ONLY with structurally sound drums and waste contents that are known to be not shock sensitive, non-reactive, non-explosive, and non-flammable.

7.2.1 MANUAL DRUM OPENING

7.2.1.1 Bung Wrench

Manual drum opening with bung wrenches should not be performed unless the drums are structurally sound (no evidence of bulging or deformation) and their contents are known to be nonexplosive. If opening the drum with bung wrenches is deemed reasonably cost-effective and safe, then certain procedures should be implemented to minimize the hazard:

- Field personnel should be fully outfitted with protective gear.
- Drums should be positioned upright with the bung up, or, for drums with bungs on the side, laid on their sides with the bung plugs up.
- The wrenching motion should be a slow, steady pull across the drum. If the length of the bung wrench handle provides inadequate leverage for unscrewing the plug, a "cheater bar" can be attached to the handle to improve leverage.

7.2.1.2 Drum Deheading

Drums are opened with a drum deheader by first positioning the cutting edge just inside the top chime and then tightening the adjustment screw so that the deheader is held against the side of the drum. Moving the handle of the deheader up and down while sliding the deheader along the chime will enable the entire top to be rapidly cut off if so desired. If the top chime of a drum has been damaged or badly dented it may not be possible to cut the entire top off. Since there is always the possibility that a drum may be under pressure, the initial cut should be made very slowly to allow for the gradual release of any built-up pressure. A safer technique would be to employ a remote method prior to using the deheader. Self-propelled drum openers which are either belectrically or pneumatically driven are available and can be used for quicker and more efficient deheading.

7.2.1.3 Hand Pick or Spike

When a drum must be opened and neither a bung wrench nor a drum deheader is suitable, then it can be opened for sampling by using a hand pick, pickaxe, or spike (Appendix B3). Often the drum lid or head must be hit with a great deal of force in order to penetrate it. Because of this, the potential for splash or spraying is greater than with other opening methods and therefore, this method of drum opening is not recommended, particularly when opening drums containing liquids. Some spikes used have been modified by the addition of a circular splash plate near the penetrating end. This plate acts as a shield and reduces the amount of splash in the direction of the person using the spike. Even with this shield, good splash gear is essential. Since drums, some of which may be under pressure, cannot be opened slowly with these tools, spray from drums is common and appropriate safety measures must be taken. The pick or spike should be decontaminated after each drum is opened to avoid cross contamination and/or adverse chemical reaction from incompatible materials.

7.2.2 Remote Opening

Remotely operated drum opening tools are the safest available means of drum opening. Remote drum opening is slow, but provides a high degree of safety compared to manual methods of opening.

7.2.2.1 Backhoe Spike

Drums should be "staged" or place in rows with adequate aisle space to allow ease in backhoe maneuvering. Once staged, the drums can be quickly opened by punching a hole in the drum head or lid with the spike.

The spike should be decontaminated after each drum is opened to prevent cross contamination. Even though some splash or spray may occur when this method is used, the operator of the backhoe can be protected by mounting a large shatter-resistant shield in front of the operator's cage. This combined with the normal personal protection gear should be sufficient to protect the operator. Additional respiratory protection can be afforded by providing the operator with an on-board airline system.

7.2.2.2 Hydraulic Devices

A piercing device with a metal point is attached to the end of a hydraulic line and is pushed into the drum by the hydraulic pressure. The piercing device can be attached so that a hole for sampling can be made in either the side or the head of the drum. Some of the metal piercers are hollow or tube-like so that they can be left in place if desired and serve as a permanent tap or sampling port. The piercer is designed to establish a tight seal after penetrating the container.

7.2.2.3 Pneumatic Devices

Pneumatically-operated devices utilizing compressed air have been designed to remove drum bungs remotely (Appendix B6).

7.3 Drum Sampling

After the drum has been opened, preliminary monitoring of headspace gases should be performed using an explosimeter and organic vapor analyzer. Refer to EPA/REAC SOP# 2061 and 2104 for guidance on instrument use.

In most cases it is impossible to observe the contents of these sealed or partially sealed vessels. Since some layering or stratification is likely in any solution left undisturbed over time, a sample must be taken that represents the entire depth of the vessel.

When sampling a previously sealed vessel, a check should be made for the presence of a bottom sludge. This is easily accomplished by measuring the depth to apparent bottom then comparing it to the known interior depth.

7.3.1 Glass Thief Sampler

The most widely used implement for sampling is a glass tube (Glass thief, 6mm to 16mm I.D. X 48in. length). This tool is simple, cost effective, quick, and collects a sample without having to decontaminate.

Specific Sampling Procedure Using a Glass Thief

1. Remove cover from sample container.
2. Insert glass tubing almost to the bottom of the drum or until a solid layer is encountered. About 1 ft. of tubing should extend above the drum.
3. Allow the waste in the drum to reach its natural level in the tube.
4. Cap the top of the sampling tube with a tapered stopper or thumb, ensuring liquid does not come into contact with stopper.
5. Carefully remove the capped tube from the drum and insert the uncapped end in the sample container. Do not

spill liquid on the outside of the sample container. Refer to EPA/REAC SOP# 2003 for selection of appropriate sample container.

6. Release stopper and allow the glass thief to drain completely into the sample container. Fill the container to about 2/3 of capacity.
7. Remove tube from the sample container, break it into pieces and place the pieces in the drum.
8. Cap the sample container tightly and place prelabeled sample container in a carrier.
9. Replace the bung or place plastic over the drum.
10. Transport sample to decontamination zone for preparation for transport to analytical laboratory.

In many instances a drum containing waste material will have a sludge layer on the bottom. Slow insertion of the sample tube down into this layer and then a gradual withdrawal will allow the sludge to act as a bottom plug to maintain the fluid in the tube. The plug can be gently removed and placed into the sample container by the use of a stainless steel lab spoon.

It should be noted that in some instances disposal of the tube by breaking it into the drum may interfere with eventual plans for the removal of its contents. The use of this technique should be cleared with the project officer or other disposal techniques evaluated.

7.3.2 COLIWASA Sampler

Designs exist for equipment that will collect a sample from the full depth of a drum and maintain it in the transfer tube until delivery to the sample bottle. These designs include primarily the Composite Liquid Waste Sampler (COLIWASA) and modifications thereof. The COLIWASA is a much cited sampler designed to permit representative sampling of multiphase wastes from drums and other containerized wastes. One configuration consists of a 152 cm by 4 cm I.D. section of tubing with a neoprene stopper at one end attached by a rod running the length of the tube to a locking mechanism at the other end. Manipulation of the locking mechanism opens and closes the sampler by raising and lowering the neoprene stopper. One model of the COLIWASA is shown in Appendix C; however, the design can be modified and/or adapted somewhat to meet the needs of the sampler. The major drawbacks associated with using a COLIWASA concern decontamination and costs. The sampler is difficult if not impossible to decontaminate in the field and its high cost in relation to alternative procedures (glass tubes) make it an impractical throwaway item. It still has applications, however, especially in instances where a true representation of a multiphase waste is absolutely necessary.

1. Put the sampler in the open position by placing the

stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.

2. Slowly lower the sampler into the liquid waste. (Lower the sampler at a rate that permits the levels of the liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sample tube is lower than that outside the sampler, the sampling rate is too fast and will result in a non-representative sample.)
3. When the sampler stopper hits the bottom of the waste container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.
4. Slowly withdraw the sample from the waste container with one hand while wiping the sampler tube with a disposable cloth or rag with the other hand.
5. Carefully discharge the sample into a suitable sample container by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in a sample container.
6. Cap the sample container with a Teflon-lined cap; attach label and seal; and record on sample data sheet.
7. Unscrew the T-handle of the sampler and disengage the locking block. Clean sampler.

8.0 CALCULATIONS

There are no specific calculations for these procedures.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

The following general quality assurance procedures apply:

1. All data must be documented on standard chain-of-custody forms, field data sheets, or within field/site logbooks.
2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.
3. All deliverables will receive peer review prior to release.

The following specific quality assurance activity will apply:

Generally, one duplicate sample is collected for every ten samples collected. Other duplicates and spikes may be required depending on particular analytical parameter requested. See the the site specific sampling plan or EPA/REAC SOP# 2005 for further QA/QC considerations.

10.0 DATA VALIDATION

The data generated will be reviewed according to the QA/QC considerations included in Section 9.0.

11.0 HEALTH AND SAFETY

The opening of closed containers is one of the most hazardous site activities. Maximum efforts should be made to ensure the safety of the sampling team. Proper protective equipment and a general awareness of the possible dangers will minimize the risk inherent to sampling operations. Employing proper drum opening techniques and equipment will also safeguard personnel. The use of remote sampling equipment whenever feasible is highly recommended.

Most drum sampling activities are performed in level B with additional splash protection. This includes:

- Protective coverall (saran Tyvek, PVC, acid suit, etc.)
- Hard hat
- SCBA
- Steel toe, steel shank boot (or latex booties covering steel toe work boots)
- Surgical gloves
- Solvent/acid resistant gloves
- Splash apron
- Face splash shield

For detailed descriptions of required levels of protection, see EPA/REAC Standard Operating Procedure # 3012, "Hazardous Waste Site Investigations" and the site specific safety plan.

12.0 REFERENCES

Guidance Document for Cleanup of Surface Tank and Drum Sites, OSWER Directive 9380.0-3.

Drum Handling Practices at Hazardous Waste Sites, EPA-600/2-86-013.

ATTACHMENT B

EPA ERT Tank Sampling SOP

(12 pages)

TANK SAMPLING

TABLE OF CONTENTS

1.0 SCOPE AND APPLICATION

The purpose of this procedure is to provide technical guidance for the implementation of sampling protocols of tanks and other confined spaces from outside the vessel.

2.0 METHOD SUMMARY

The safe collection of a representative sample should be the criteria for selecting sample locations. A representative sample can be collected using techniques and/or equipment that are designed for obtaining liquids or sludges from various depths. The structure and characteristics of storage tanks present problems with collection of samples from more than one location; therefore, the selection of sampling devices is important.

Depending on the type of vessel and characteristics of the material to be sampled, one can choose bailers, glass thieves, bacon bombs, sludge judges, COLIWASAs, or subsurface grab samplers to collect the sample. For depths of less than 5-ft., a bailer, COLIWASA, or sludge judge is used. Sludge judges, subsurface grab samplers, bailers, and bacon bombs can be used for depths greater than 5-ft. A sludge judge or bacon bomb can be used to determine if the tank consists of various strata.

All sample locations should be surveyed for air quality prior to sampling. At no time should sampling continue with a LEL reading greater than 25%.

All personnel involved in tank sampling should be advised as to the hazards associated with working in unfavorable conditions.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

- No preservatives shall be used.
- Place sample container in two ziplock plastic bags.
- Place each bagged container in a 1-gallon covered can containing absorbent packing material. Place lid on can.
- Mark the sample identification number on the outside of the can.
- Place the marked cans in a cooler, and fill remaining space with absorbent packing material.
- Fill out chain of custody record for each cooler, place in plastic, and affix to inside lid of cooler.
- Secure and custody seal the lid of cooler.
- Arrange for the appropriate transportation mode consistent with the type of hazardous waste involved.

The size and type of sample container used depends on the required analytical parameters for the waste sampled. See EPA/REAC SOP #2003 for appropriate containers for specific analyses.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

Sampling a storage tank requires a great deal of manual dexterity; often requiring climbing to the top of the tank through a narrow vertical or spiral stairway or ladder while wearing protective clothing and carrying sampling equipment.

Before climbing onto the vessel, a structural survey should be performed. This will ensure the consideration of safety, accessibility and sample quality.

As in all opening of containers, extreme caution should be taken to avoid ignition or combustion of volatile contents. All tools used should be constructed of a non-sparking material and electronic instruments intrinsically safe.

5.0 EQUIPMENT/APPARATUS

Storage tank materials include liquids, sludges, and solids of various structure. The type of sampler chosen should be compatible with the waste. Samplers commonly used for tanks include: the bacon bomb sampler, the sludge judge, glass thief, bailers, and subsurface grab samplers.

Tank Sampling Equipment Checklist:

- Sampling plan
- Safety equipment, as specified in the Health and Safety Plan
- Tape measure
- Camera
- Stainless steel bucket or bowl
- Sample containers
- Ziplock plastic bags
- Logbook
- Labels
- Chain of custody forms
- Flashlight (explosion proof)
- Coolers
- Ice
- Decontamination supplies
- Bacon bomb sampler
- Sludge judge
- Glass thieves
- Bailers
- COLIWASA
- Subsurface grab sampler
- Water/oil level indicator
- OVA (organic vapor analyzer or equivalent)
- Explosimeter/oxygen meter

6.0 REAGENTS

This procedure does not require the use of reagents; except for decontamination of equipment, as required. Refer to EPA/REAC SOP#2006, Equipment Decontamination Procedures and site specific work plan for appropriate solvents.

7.0 PROCEDURE

7.1 Preparation

A. Office Preparation

1. Prepare a Health and Safety Plan as required, prior to any sampling. The plan must be approved and signed by the REAC Health and Safety Officer or his/her designee.

2. Prepare a sampling plan in accordance with EPA/REAC SOP#2014, Quality Assurance Work Plan Preparation. Review available background information (i.e. topographic maps, soil survey maps, geologic survey maps, other site reports) to determine the extent of the sampling effort, the sampling methods to be bemployed, and the types and amounts of equipment and supplies required.

3. Obtain necessary sampling and monitoring equipment (see Section 5). Decontaminate or pre-clean equipment, and ensure that it is in working order.

4. Contact delivery service to confirm ability to ship all equipment and samples. Determine if shipping restrictions exist.

5. Prepare schedules and coordinate with staff, client, and regulatory agencies, if appropriate.

B. Field Preparation

1. Identify local suppliers of sampling expendables (e.g., ice, plastic bags) and overnight delivery services (i.e., Federal Express, Emery, Purolator).

2. Decontaminate or pre-clean all equipment before tank sampling, as described in EPA/REAC SOP# 2006, Sample Container and Equipment Decontamination, or as deemed necessary.

3. A general site survey should be performed prior to site entry in accordance with the Health and Safety Plan.

4. Identify all sampling locations. If required, the proposed locations may be adjusted based on access, and other obstructions.

7.2 Sample Collection

A. Tank Structural Survey

The external structural characteristics of each tank should be inspected and recorded. Potential sampling points should be evaluated for safety, accessibility and sample quality.

B. Tank Opening Procedure

1. Prior to opening a tank for internal inspection, the tank sampling team shall:

- Review safety procedures and emergency contingency plans with the Safety Officer.
- Ensure that the tank is properly grounded.
- Remove all sources of ignition from the immediate area.

2. Each tank should be mounted using appropriate means. Remove manway covers using non-sparking tools.

3. Collect air quality measurements for each potential sample location using an explosimeter/oxygen meter for a lower explosive limit (LEL/O2) reading and an OVA/HNU for an organic vapor concentration. Both readings should be taken from the tank headspace and above the sampling port.

4. Prior to commencing sampling, the tank headspace should be cleared of any toxic or explosive vapor concentration using a high volume blower. No work shall start if LEL reading exceeds 25%. At 10% LEL readings, work can continue but with extreme caution.

C. Sampling Procedure

1. Determine the depth of any and all liquid solid interface, and depth of sludge using a weighted tape measure or probe line.

2. Collect liquid samples from 1-ft. below the surface, from mid depth of liquid, and from 1-ft. above the bottom sludge layer. This can be accomplished with a subsurface grab sampler or bacon bomb. For liquids less than 5-ft. in depth, use a glass thief or COLIWASA to collect the sample.

If sampling storage tanks, vacuum trucks, or process vessels, collect at least one sample from each compartment in the tank. Samples should always be collected through an opened hatch at the top of the tank. Valves near the bottom should not be used, because of their questionable or unknown integrity. If such a valve cannot be closed once opened, the entire tank contents may be lost to the ground surface. Also, individual strata cannot be sampled separately through a valve near the bottom.

3. Compare the three samples for visual phase

differences. If phase differences appear, systematic iterative sampling should be performed. By halving the distance between two discrete sampling points, one can determine the depth of the phase change.

4. If another sampling port is available, sample as above to verify the phase information.

5. Measure the outside diameter of the tank and determine the volume of wastes using the depth measurements (Calculations, Appendix B).

6. Sludges can be collected using a bacon bomb sampler, glass thief, or sludge judge.

7. Record all information on the sample data sheet and logbook. Label the container with the appropriate sample tag addressing all the categories listed in EPA/REAC SOP #2002, Sample Documentation.

8. Decontaminate sampling equipment as per EPA/REAC SOP #2006, Sample Container and Equipment Decontamination.

7.3 Sampling Devices

A. Bacon Bomb Sampler

The bacon bomb (Figure 1, Appendix A) is designed for the collection of material from various levels within a storage tank. It consists of a cylindrical body, usually made of chrome-plated brass and bronze with and internal tapered plunger that acts as a valve to admit the sample. A line attached to the top of the plunger opens and closes the valve. A line is attached to the removable top cover which has a locking mechanism to keep the plunger closed after sampling.

Procedures for Use:

1. Attach the sample line and the plunger line to the sampler.
2. Measure and then mark the sampling line at the desired depth.
3. Gradually lower the sampler by the sample line until the desire level is reached.
4. When the desired level is reached, pull up on the plunger line and allow the sampler to fill for a sufficient length of time before releasing the plunger line to seal off the sampler.
5. Retrieve the sampler by the sample line being careful not to pull up on the plunger line and thereby prevent accidental opening of the bottom valve.
6. Rinse or wipe off the exterior of the sampler body.
7. Position the sampler over the sample container and

release its contents by pulling up on the plunger line.
8. Thoroughly decontaminate the sampler prior to next use.

B. Sludge Judge

The sludge judge (Figure 2, Appendix A) is used for collecting an accurate reading of settleable solids in any liquid, to any depth. The sampler consists of 3/4" plastic pipe in 5 ft. sections, marked at 1 ft. increments, with screw-type fittings. The top section includes a nylon line for raising the sampler.

Procedures for Use:

1. Lower the sludge judge to the bottom of the tank.
2. When the bottom has been reached, and the pipe has filled to surface level, tug slightly on the rope as you begin to raise the unit. This will seat the check valve, trapping the column of material.
3. When the unit has been raised clear of the tank liquid, the amount of sludge in the sample can be read using the 1 ft. increments marked on the pipe sections.
4. By touching the pin extending from the bottom section against a hard surface, the material is released from the unit.

C. Subsurface Grab Sampler

Subsurface grab samplers (Figure 3, Appendix A) are designed to collect samples of liquids at various depths. It is usually constructed of aluminum or stainless steel tubing with a polypropylene or teflon head that attaches to a 1-liter sample container.

Procedures for Use:

1. Screw the sample bottle onto the sampling head.
2. Lower the sampler to the desired depth.
3. Pull the ring at the top which opens the spring-loaded plunger in the head assembly.
4. When the bottle is full, release the ring, lift sampler, and remove sample bottle.
5. Cap the sample bottle.

D. Glass Thief

The most widely used implement for sampling is a glass tube (Glass thief, 6mm to 16mm I.D. X 48in. length). This tool is simple, cost effective, quick, and collects a sample without having to decontaminate.

Procedures for Use:

1. Remove cover from sample container.
2. Insert glass tubing almost to the bottom of the tank or until a solid layer is encountered. About 1 ft. of tubing should extend above the drum.
3. Allow the waste in the tank to reach its natural level in the tube.
4. Cap the top of the sampling tube with a tapered stopper or thumb, ensuring liquid does not come into contact with stopper.
5. Carefully remove the capped tube from the tank and insert the uncapped end in the sample container. Do not spill liquid on the outside of the sample container. Refer to EPA/REAC SOP# 2003 for selection of appropriate sample container.
6. Release stopper and allow the glass thief to drain completely into the sample container. Fill the container to about 2/3 of capacity.
7. Remove tube from the sample container, break it into pieces and place the pieces in the tank.
8. Cap the sample container tightly and place prelabeled sample container in a carrier.
9. Replace the bung or place plastic over the tank.
10. Transport sample to decontamination zone for preparation for transport to analytical laboratory.

In many instances a tank containing waste material will have a sludge layer on the bottom. Slow insertion of the sample tube down into this layer and then a gradual withdrawal will allow the sludge to act as a bottom plug to maintain the fluid in the tube. The plug can be gently removed and placed into the sample container by the use of a stainless steel lab spoon.

E. Bailer

The positive-displacement volatile sampling bailer (by GPI) is perhaps the most appropriate for collection of water samples for volatile analysis. Other bailer types (messenger, bottom fill, etc.) are less desirable, but may be mandated by cost and site conditions. Generally, bailers can provide an acceptable sample, providing that the sampling personnel use extra care in the collection process.

Operation

1. Make sure clean plastic sheeting surrounds the tank.
2. Attach a line to the bailer. If a bailer was used for purging, the same bailer and line may be used for sampling.
3. Lower the bailer slowly and gently into the tank taking care not to shake the casing sides, or to splash the bailer into the water.
4. Slowly and gently retrieve the bailer from the tank avoiding contact with the sides, so knocking flakes

of rust or other foreign materials into the bailer or splashing will be minimized.

5. Remove cap from sample container and place it on plastic sheet or location where it won't be contaminated.
6. Begin slowly pouring from the bailer.
7. Filter and preserve samples as required by sampling plan. Mark water level on container with grease pencil.
8. Prepare the necessary quality assurance samples. Collect duplicate samples from the midstream.
9. Log all samples in the field logbook and on field data sheets and label all samples (see Sample Documentation SOP 2002).
10. Package samples and complete necessary paperwork (see Sample Packaging and Shipping SOP 2004).
11. Repeat this process until all samples have been taken at the tank.

F. COLIWASA

Designs exist for equipment that will collect a sample from the full depth of a tank and maintain it in the transfer tube until delivery to the sample bottle. These designs include primarily the Composite Liquid Waste Sampler (COLIWASA) and modifications thereof. The COLIWASA is a much cited sampler designed to permit representative sampling of multiphase wastes from tanks and other containerized wastes. One configuration consists of a 152 cm by 4 cm I.D. section of tubing with a neoprene stopper at one end attached by a rod running the length of the tube to a locking mechanism at the other end. Manipulation of the locking mechanism opens and closes the sampler by raising and lowering the neoprene stopper.

The major drawbacks associated with using a COLIWASA concern decontamination and costs. The sampler is difficult if not impossible to decontaminate in the field and its high cost in relation to alternative procedures (glass tubes) make it an impractical throwaway item. It still has applications, however, especially in instances where a true representation of a multiphase waste is absolutely necessary.

1. Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
2. Slowly lower the sampler into the liquid waste. (Lower the sampler at a rate that permits the levels of the liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sample tube is lower than that outside the sampler, the sampling rate is too fast and will result in a non-representative sample.)
3. When the sampler stopper hits the bottom of the

waste container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.

4. Slowly withdraw the sample from the waste container with one hand while wiping the sampler tube with a disposable cloth or rag with the other hand.
5. Carefully discharge the sample into a suitable sample container by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in a sample container.
6. Cap the sample container with a Teflon-lined cap; attach label and seal; and record on sample data sheet.
7. Unscrew the T-handle of the sampler and disengage the locking block. Clean sampler.

8.0 CALCULATIONS

There are no specific calculations for these procedures. Refer to Appendix B regarding calculations utilized in determining tank volumes.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

9.1 Sampling Documentation

A. All tank samples shall be documented in accordance with EPA/REAC SOP #2002, Sample Documentation. The sample label is filled out prior to collecting the sample and will contain the following items:

- Site name or identification.
- Sample location and identifier.
- Date samples were collected; in a day, month, year format (e.g., 03 JAN 88 for January 3, 1988).
- Time of sample collection, using 24 hour clock in format hours and minutes.
- Sample depth interval. Units used for depths should be in feet and tenths of feet.
- Preservatives used, if any.
- Analysis required.
- Sampling personnel.
- Comments and other relevant observations (e.g., color, odor, sample technique).

B. Logbook

A bound, field notebook will be maintained by field personnel to record daily activities, including sample collection and tracking information. A separate entry will be made for each sample collected. These entries should include information from the sample label and a complete physical description of the sample including texture, color, consistency, moisture content, and structure.

C. Chain of Custody

Use the Chain-of-Custody Form to document the types and numbers of tank samples collected and logged. Refer to EPA/REAC SOP #2002, Sample Documentation for directions on filling out this form.

9.2 Sampling Design and Implementation

Sampling situations vary widely and therefore no universal sampling procedure can be recommended. However, a sampling plan should be implemented before any sampling operation is attempted.

Any of the sampling methods described here should allow a representative tank sample to be obtained if the sampling plan is properly designed.

Consideration must also be given to the collection of a sample representative of all strata present in the tank. Selection of the proper sampler will facilitate this procedure.

A stringent quality assurance project plan should be outlined before any sampling operation is attempted. This should include, but not be limited to, laboratory clean samplers and sample containers, chain of custody procedures, and duplicate samples.

10.0 DATA VALIDATION

The data generated will be reviewed according to the Quality Assurance/Quality Control considerations identified in Section 9.0.

11.0 HEALTH AND SAFETY

The hazards associated with tank sampling cause bodily injury, illness, or death to the worker. Failure to recognize potential hazards of waste containers is the cause of most accidents. It should be considered that the most unfavorable condition exists, and that the danger of explosion and poisoning will be present. Hazards specific to tank sampling are:

A. Hazardous Atmospheres

- Flammable
- Toxic
- Irritant and/or Corrosive
- Asphyxiating

B. Mechanical

If activation of electrical or mechanical equipment would cause injury, each piece of equipment should be manually isolated to prevent inadvertent activation while workers are occupied.

C. Communication and Lighting

Communication is of utmost importance between the sampling worker and the standby person to prevent distress or injury going unnoticed. The Illuminating Engineering Society Lighting Handbook requires suitable illumination to provide sufficient visibility for work.

D. Physical

- Thermal effects including: heat exhaustion/stroke, hypothermia, frostbite, etc.
- Noise due to reverberation of the sound. This may disrupt verbal communication with standby personnel.
- Vibration may affect multiple body parts and organs depending upon vibration characteristics.
- General, including: scaffolding falling, surface residues (electrical shock, incompatible material reactions, slips, falls), and structural objects (baffles/trays in horizontal/vertical tanks, overhead structures).

12.0 REFERENCES

Guidance Document for Cleanup of Surface Tank and Drum Sites, OSWER Directive 9380.0-3.

Drum Handling Practices at Hazardous Waste Sites, EPA-600/2-86-013.

ATTACHMENT C

EPA ERT Soil Sampling SOP

(12 pages)

SOIL SAMPLING

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SOIL SAMPLING

1.0 SCOPE AND APPLICATION

This document describes the procedures for the collection of representative soil samples. Analysis of soil samples may determine whether concentrations of specific soil pollutants exceed established threshold action levels, or if the concentrations of soil pollutants present a risk to public health, welfare, or the environment.

Included in this discussion are procedures for obtaining representative samples, Quality Assurance/Quality Control measures; proper documentation of sampling activities, and recommendations for personal safety.

2.0 METHOD SUMMARY

Soil samples may be recovered using a variety of methods and equipment. These are dependent on the depth of the desired sample; the type of sample required (disturbed vs. undisturbed); and the soil type.

Near-surface soils may be easily sampled using a spade, trowel, and scoop. Sampling at greater depths may be performed using a hand auger, a power auger, or, if a test pit is required, a backhoe.

All sampling devices should be laboratory cleaned, preferably by the laboratory performing the analysis, using pesticide grade acetone (assuming that acetone is not a target compound) or methanol, then wrapped in cleaned and autoclaved aluminum foil, and custody sealed for identification. The sampler should remain in this wrapping until it is needed. Each sampler should be used for one sample only. However, dedicated samplers may be impractical if there are a large number of soil samples required. In this case, samplers should be cleaned in the field using the decontamination procedure in EPA/REAC SOP# 2006, Sample Container and Equipment Decontamination.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The chemical preservation of solids is not generally recommended. Refrigeration is usually the best approach, supplemented by a minimal holding time.

Soil samples should be handled according to the procedures described in EPA/REAC SOP# 2003, Sample Storage, Preservation and Shipping by Parameter or Group of Parameters.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary interferences or potential problems with soil sampling. These include cross contamination of samples and improper sample collection. Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment and bottles. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, the disturbance of the matrix resulting in compaction of the sample and inadequate homogenizing the samples where required, resulting in variable, non-representative results.

5.0 EQUIPMENT

Soil Sampling Equipment List

Sampling Plan
Maps/Plot Plan
Safety equipment, as specified in the Health and Safety Plan
Compass
Tape measure
Survey stakes or flags
Camera

Stainless steel bucket or bowl
One-quart mason jars w/Teflon liners
Plastic bags for samples and sample jars
Logbook
Labels
Chain of Custody forms
Site Description forms
Cooler(s)
Ice
Decontamination supplies/equipment

Canvas or plastic sheet
Spade or shovel
Spatula
Scoop
Trowel
Continuous flight auger
Bucket auger
Extension rods

T-Handle
Sampling trier
Vehimeyer soil sampler outfit
- Tubes
- Points
- Drive head
- Drop hammer
- Puller jack and grip

Backhoe

6.0 REAGENTS

This procedure does not require the use of reagents; except for decontamination of equipment, as required. Refer to EPA/REAC

SOP# 2006 Equipment Decontamination Procedures and site specific work plan for appropriate solvents.

7.0 PROCEDURES

7.1 Office Preparation

1. The preparation of a Health and Safety Plan is required prior to any sampling. The plan must be approved and signed by the Corporate Health and Safety Officer or his/her designee.
2. Prepare a sampling plan in accordance with EPA/REAC SOP# 2014, Quality Assurance Work Plan Preparation. Review available background information (i.e. topographic maps, soil survey maps, geologic survey maps, other site reports, etc.) to determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and supplies required.
3. Obtain necessary sampling and monitoring equipment (see Section 5). Decontaminate or pre-clean equipment, and ensure that it is in working order.
4. Contact delivery service to confirm ability to ship all equipment and samples. Determine if shipping restrictions exist.
5. Prepare schedules and coordinate with staff, client, and regulatory agencies, if appropriate.

7.2 Field Preparation

1. Identify local suppliers of sampling expendables (e.g., ice, plastic bags) and overnight delivery services (e.g., Federal Express, Emery, Purolator).
2. Decontaminate or pre-clean all equipment before soil sampling, as described in EPA/REAC SOP# 2006, Sample Container and Equipment Decontamination, or as deemed necessary.
3. A general site survey should be performed prior to site entry in accordance with the Health and Safety Plan.
4. Identify and stake all sampling locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations will be utility-cleared by the property owner prior to soil sampling.

7.3 Sample Collection

A. Surface Soil Samples

Collection of samples from near-surface soil can be accomplished with tools such as spades, shovels, and scoops. The surface material can be removed to the required depth with this equipment, then a stainless steel or plastic scoop can be used to collect the sample.

This method can be used in most soil types but is limited to sampling near surface areas. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by the sampling technician. The use of a flat, pointed mason trowel to cut a block of the desired soil can be helpful when undisturbed profiles are required. A stainless steel scoop, lab spoon, or plastic spoon will suffice in most other applications. Care should be exercised to avoid the use of devices plated with chrome or other materials. Plating is particularly common with garden implements such as potting trowels.

The following procedure is used to collect the soil samples:

1. Carefully remove the top layer of soil to the desired sample depth with a precleaned spade.

2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which comes in contact with the shovel.

3. Transfer sample into an appropriate sample container with a stainless steel or plastic lab spoon, or equivalent. If composite samples are to be collected, place the soil sample in a stainless steel or plastic bucket, and mix thoroughly to obtain a homogeneous sample representative of the entire sampling interval. Then, place soil sample into labeled containers.

4. Samples for volatile organic analysis will be collected directly from the bottom of the hole before mixing the sample to minimize volatilization of contaminants.

5. Check that the Teflon liner is present in the cap, if required. Secure the cap tightly. The chemical preservation of solids is generally not recommended. Refrigeration is usually the best approach, supplemented by a minimal holding time. Refer to EPA/REAC SOP# 2003, Sample Storage, Preservation, and Shipping by Parameter or Group of Parameters.

6. Check to be sure that enough sample has been collected for the desired analysis, as specified in Sampling Plan.

7. Decontaminate equipment between samples, according to EPA/REAC SOP# 2006, Sample Container and Equipment Decontamination.

8. Fill in the hole and replace grass turf if necessary.

9. Collect QA/QC samples as specified, according to the QAWP.

10. Collect background samples if specified in the sampling plan (work plan) using the procedure outlined in steps 1-7 above.

B. Sampling at depth with Augers and Thin Wall Tube Samplers

This system consists of an auger, a series of extensions, a "T" handle, and a thin-wall tube sampler (Appendix A). The auger is used to bore a hole to a desired sampling depth, and is then withdrawn. The auger tip is then replaced with a tube core sampler, lowered down the borehole, and driven into the soil at the completion depth. The core is then withdrawn and the sample collected.

Several augers are available. These include: bucket type, continuous flight (screw), and posthole augers. Bucket type are better for direct sample recovery as they provide a large volume of sample in a short time. When continuous flight augers are used, the sample can be collected directly off the flights, which are usually at five (5) feet intervals. The continuous flight augers are satisfactory for use when a composite of the complete soil column is desired. Posthole augers have limited utility for sample collection as they are designed to cut through fibrous, rooted, swampy soil.

The following procedure will be used for collecting soil samples with the hand auger:

1. Attach the auger bit to a drill rod extension, and attach the "T" handle to the drill rod.

2. Clear the area to be sampled of any surface debris (e.g.: twigs, rocks, litter). It may be advisable to remove the first 3 to 6 inches of surface soil for an area approximately 6 inches in radius around the drilling location.

3. Begin augering, periodically removing and depositing accumulated soils onto a canvas or plastic sheet spread near the hole. This prevents accidental brushing of loose material back down the borehole when removing the auger or adding drill rods. It also facilitates refilling the hole, and avoids possible contamination of the surrounding area.

4. After reaching the desired depth, slowly and carefully remove the auger from boring. When sampling directly from the auger, collect sample after the auger is removed from boring and proceed to Step 10.

5. Remove auger tip from drill rods and replace with a pre-cleaned thin-wall tube sampler. Install proper cutting tip.

6. Carefully lower the tube sampler down the borehole. Gradually force the tube sampler into soil. Care should be taken to avoid scraping the borehole sides. Avoid hammering the drill rods to facilitate coring as the vibrations may cause the boring walls to collapse.

7. Remove the tube sampler, and unscrew the drill rods.

8. Remove the cutting tip and the core from device.

9. Discard the top of the core (approximately 1 inch), as this represents material collected before penetration of the layer in question. Place the remaining core into the sample container.

10. If required, ensure that a Teflon liner is present in the cap. Secure the cap tightly onto the sample container and place on ice immediately after collection. Freezing may be required. Consult EPA/REAC SOP# 2003, Sample Storage, Preservation, and Shipping by Parameter or Groups of Parameters.

11. Carefully and clearly label the container with the appropriate sample tag addressing all the categories or parameters listed in EPA/REAC SOP# 2002, Sample Documentation.

12. Use the Chain-of-Custody Form to document the types and numbers of soil samples collected and logged.

13. Record the time and date of sample collection as well as a description of the sample in the field logbook.

14. If another sample is to be collected in the same hole, but at a greater depth, reattach the auger bit to the drill and assembly, and follow steps 3 through 11, making sure to decontaminate the auger and tube sampler between samples.

15. Abandon the hole according to applicable State regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

16. Decontaminate the sampling equipment as per EPA/REAC SOP# 2006, Sample Container and Equipment Decontamination.

C. Sampling at Depth with a Trier

1. Insert the trier (Appendix B) into the material to be sampled at a 0o to 45o angle from horizontal. This orientation minimizes the spillage of sample. Extraction of samples might require tilting of the containers.

2. Rotate the trier once or twice to cut a core of material.

3. Slowly withdraw the trier, making sure that the slot is facing upward.

4. Transfer the sample into a suitable container with the aid of a spatula and/or brush.

5. If required, ensure that a Teflon liner is present in the cap. Secure the cap tightly onto the sample container. Samples are handled in accordance with EPA/REAC SOP# 2003,

Sample Storage, Preservation, and Shipping by Parameter or Groups of Parameters.

6. Carefully and clearly label the container with the appropriate sample tag addressing all the categories or parameters listed in EPA/REAC SOP# 2002, Sample Documentation.

7. Use the Chain-of-Custody Form to document the types and numbers of soil samples collected and logged.

8. Record the time and date of sample collection as well as a description of the sample and any associated air monitoring measurements in the field logbook.

9. Abandon the hole according to applicable State regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

10. Decontaminate sampling equipment as per EPA/REAC SOP# 2006, Sample Container and Equipment Decontamination.

D. Sampling at Depth with a Split Spoon (Barrel) Sampler

The procedure for split spoon sampling describes the extraction of undisturbed soil cores of 18 or 24 inches in length (Appendix C). A series of consecutive cores may be sampled to give a complete soil column, or an auger may be used to drill down to the desired depth for sampling. The split spoon is then driven to its sampling depth through the bottom of the augured hole and the core extracted.

This sampling device may be used to collect such information as soil density. All work should be performed in accordance with ASTM D 1586-84, Penetration Test and Split Barrel Sampling of Soils.

1. Assemble the sampler by aligning both sides of barrel and then screwing the bit on the bottom and the heavier head piece on top.

2. Place the sampler in a perpendicular position on the sample material.

3. Using a sledge hammer or well ring, if available, drive the tube. Do not drive past the bottom of the head piece or compression of the sample will result.

4. Record the length of the tube used to penetrate the material being sampled, and the number of blows required to obtain this depth.

5. Withdraw the sampler, and open by unscrewing bit and head and splitting barrel. If split sampler is desired, a cleaned, stainless steel knife should be used to divide the

appropriate sample tag addressing all the categories or parameters listed in EPA/REAC SOP # 2002, Sample Documentation.

7. Use the Chain-of-Custody Form to document the types and numbers of soil samples collected and logged.

8. Record the time and date of sample collection as well as a description of the sample and any associated air monitoring measurements in the field logbook.

9. Abandon the hole according to applicable State regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

10. Decontaminate sampling equipment including the backhoe bucket, as per EPA/REAC SOP # 2006, Sample Container and Equipment Decontamination.

7.4 Post Operation

A. Field

1. Decontaminate all equipment according to EPA/REAC SOP# 2006, Sample Container and Equipment Decontamination.

B. Office

1. Finalize field notes into a report format and/or transfer logging information to appropriate forms.

8.0 CALCULATIONS

There are no specific calculations required for these procedures.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

9.1 Sampling Documentation

A. All soil samples shall be documented in accordance with EPA/REAC SOP# 2002, Sample Documentation. The soil sample label is filled out prior to collecting the sample, and should contain the following:

1. Site name or identification.
2. Sample location and identifier.
3. Date samples were collected; in a day, month, year format (e.g., 03 JAN 88 for January 3, 1988).
4. Time of sample collection, using 24 hour clock in format hours and minutes.
5. Sample depth interval. Units used for depths should be in feet and tenths of feet.
6. Preservatives used, if any.
7. Analysis required.

8. Sampling personnel.
9. Comments and other relevant observations (e.g., color, odor, sample technique).

B. Logbook

A bound, field notebook will be maintained by field personnel to record daily activities, including sample collection and tracking information. A separate entry will be made for each sample collected. These entries should include information from the sample label and a complete physical description of the soil sample including texture, color (including notation of soil mottling) consistency, moisture content, cementation, and structure.

C. Chain of Custody

Use the Chain-of-Custody Form to document the types and numbers of soil samples collected and logged. Refer to EPA/REAC SOP# 2002, Sample Documentation for directions on filling out this form.

9.2 Sampling Design and Quality Assurance

1. Sampling situations vary widely and therefore no universal sampling procedure can be recommended. However, a sampling plan should be implemented before any sampling operation is attempted.

2. Any of the sampling methods described here should allow a representative soil sample to be obtained if the sampling plan is properly designed.

3. Consideration must also be given to the collection of a sample representative of all horizons present in the soil. Selection of the proper sampler will facilitate this procedure.

4. A stringent quality assurance project plan should be outlined before any sampling operation is attempted. This should include, but not be limited to, laboratory clean samplers and sample containers, chain of custody procedures, and duplicate samples.

10.0 DATA VALIDATION

The data generated will be reviewed according to the Quality Assurance/Quality Control considerations identified in Section 9.0.

11.0 HEALTH AND SAFETY

A. Hazards Associated with On-Site Contaminants

Depending upon site-specific contaminants, various protective programs must be implemented prior to soil sampling. The site

Health and Safety plan should be reviewed with specific emphasis placed on a protection program planned for other direct contact tasks. Standard safe operating practices should be followed including minimization of contact with potential contaminants in both the vapor phase and solid matrix by using both respirators and disposable clothing.

Use appropriate safe work practices for the type of contaminant expected (or determined to be in previous sampling efforts):

1. Particulate or Metals Contaminants

- Avoid skin contact with and/or incidental ingestion of soils and dusts.
- Use long sleeve protective gloves.

2. Volatile Organic Contaminants

- Pre-survey the site with an FID/PID prior to taking soil samples.
- If monitoring results indicate organic constituents, sampling activities may be conducted in Level C protection. At a minimum, skin protection will be afforded by disposable protective clothing.

B. Physical Hazards Associated with Soil Sampling

1. Lifting injuries associated with moving equipment.

2. Heat/cold stress as a result of exposure to extreme temperatures and protective clothing.
3. Slip, trip, fall conditions as a result of site obstacles.
4. Restricted mobility due to the wearing of protective clothing.

12.0 REFERENCES

Mason, B.J., Preparation of Soil Sampling Protocol: Technique and Strategies. 1983 EPA-600/4-83-020.

Barth, D.S. and B.J. Mason, Soil Sampling Quality Assurance User's Guide. 1984 EPA-600/4-84-043.

USEPA. Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. 1984 EPA-600/4-84-076.

de Vera, E.R., B.P. Simmons, R.D. Stephen, and D.L. Storm. Samplers and Sampling Procedures for Hazardous Waste Streams. 1980 EPA-600/2-80-018.

ASTM D 1586-67 (reapproved 1974), ASTM Committee on Standards, Philadelphia, PA.

TDD No. 06-9004-09

ATTACHMENT 4

HAZARD CATEGORIZATION RESULTS

(20 pages)

STREAMLINE Data Entry

SAMPLE ID [1] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] N Top Lower S
((Y)es/(G)reater/(L)ess) <1

PH [ ] 13
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] N N
CHLORINE (Y/N) [ ]
Halogen N

LABEL [Floride N]
COMMENTS [2 layers]
LOCATION [ ] ACT. TAKEN [Organic N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [2] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] I, L
((Y)es/(G)reater/(L)ess)

PH [ ]
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] Comb.
CHLORINE (Y/N) [ ]
PCB - N

LABEL [ ]
COMMENTS [Oil]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [3] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [12]
OXIDIZER (Y/N) [ ] N
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ]
CHLORINE (Y/N) [ ]
Floride N

LABEL [ ]
COMMENTS [Organic N]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ] Halo. N

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [4] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y)/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [ ]
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [ ]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [4] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y)/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [12]
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ]
CHLORINE (Y/N) [ ]

LABEL [Halo ≠N]
COMMENTS [Looks like #3 Flouid N]
LOCATION [ ] ACT. TAKEN [Organic N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [5] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y)/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] Comb.
CHLORINE (Y/N) [N]

LABEL [Flaide N]
COMMENTS [Halo. N]
LOCATION [ ] ACT. TAKEN [Organic N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [6] (A)11/(T)op/(B)ottom   SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]   MATERIAL [ ]
SIZE (Gallons) [ ]   ((S)teel/(G)lass/(P)oly/(F)iber)
TOP (O)pen/(B)ung [ ]   CONDITION [ ]
AMOUNT (1=Full/0=Empty) [ ]   ((P)oor/(F)air/(G)ood)

MATRIX [ ]   SOLUBLE (Y/G/L) [ ]
((S)olid/(L)iquid/(G)as)   ((Y)es/(G)reater/(L)ess)

PH [7]   SULFIDE (Y/N) [ ]
OXIDIZER (Y/N) [N]   BIC (Y/N) [ ] Comb.
CYANIDE (Y/N) [ ]   CHLORINE (Y/N) [ ]

LABEL [Floro N]
COMMENTS [Organic N]
LOCATION [ ] ACT. TAKEN [Halo. N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [7] (A)11/(T)op/(B)ottom   SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]   MATERIAL [ ]
SIZE (Gallons) [ ]   ((S)teel/(G)lass/(P)oly/(F)iber)
TOP (O)pen/(B)ung [ ]   CONDITION [ ]
AMOUNT (1=Full/0=Empty) [ ]   ((P)oor/(F)air/(G)ood)

MATRIX [ ]   SOLUBLE (Y/G/L) [ ]
((S)olid/(L)iquid/(G)as)   ((Y)es/(G)reater/(L)ess)

PH [ ] 7   SULFIDE (Y/N) [ ]
OXIDIZER (Y/N) [ ] N   BIC (Y/N) [ ] Comb.
CYANIDE (Y/N) [ ]   CHLORINE (Y/N) [ ]

LABEL [Fl. N]
COMMENTS [~~2 phase~~ ~~Top oil~~ Org. N]
LOCATION [ ] ACT. TAKEN [Halo. N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [8] (A)11/(T)op/(B)ottom   SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]   MATERIAL [ ]
SIZE (Gallons) [ ]   ((S)teel/(G)lass/(P)oly/(F)iber)
TOP (O)pen/(B)ung [ ]   CONDITION [ ]
AMOUNT (1=Full/0=Empty) [ ]   ((P)oor/(F)air/(G)ood)

MATRIX [ ]   SOLUBLE (Y/G/L) [ ] Bot. S / Top N
((S)olid/(L)iquid/(G)as)   ((Y)es/(G)reater/(L)ess)

PH [ ] Bot. 13   SULFIDE (Y/N) [N]
OXIDIZER (Y/N) [N]   BIC (Y/N) [ ] Top Flam / Bot. N
CYANIDE (Y/N) [N]   CHLORINE (Y/N) [ ]

LABEL [Fl. N]
COMMENTS [2 phase Top oil Org. N]
LOCATION [ ] ACT. TAKEN [Halo. N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [9] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Bot S/ Top L
((Y)es/(G)reater/(L)ess)

PH [ ] Bot. 13
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] ~~Top Flam~~ Bot Comb
CHLORINE (Y/N) [ ]
Fl. N

LABEL [ ]
COMMENTS [2 phase Top oil Org. N]
LOCATION [ ] ACT. TAKEN [Halo. N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [10] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Y
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] comb
CHLORINE (Y/N) [ ]
~~PCB~~

LABEL [ ]
COMMENTS [Oil? Fl. N]
LOCATION [ ] ACT. TAKEN [Org. N]
HAZARD CLASS [ ] Halo N

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [11] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [ ] N
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] Comb
CHLORINE (Y/N) [ ]
Fl. N

LABEL [ ]
COMMENTS [Org. N]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ] Halo N

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [12] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Y/Y
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] ~~Top Comb~~ Bot Comb
CHLORINE (Y/N) [ ]

LABEL [Org. N]
COMMENTS [2 phase Fl N]
LOCATION [ ] ACT. TAKEN [Halo. V]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [13] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] S/S/S T Bot Mid
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [ ]N
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] C/C/C
CHLORINE (Y/N) [ ]

LABEL [Fl. N]
COMMENTS [3 phase Org. N]
LOCATION [ ] ACT. TAKEN [Halo N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [14] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] ~~Top & Bot~~ S
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ] Comb
BIC (Y/N) [ ]
CHLORINE (Y/N) [ ]

LABEL [Fl. N]
COMMENTS [~~2 phase~~ Org N]
LOCATION [ ] ACT. TAKEN [Halo N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [15] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Top L / Bot S
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] Top Comb / Bot Comb
CHLORINE (Y/N) [ ] N

LABEL [F1. N]
COMMENTS [2 phase Org. N]
LOCATION [ ] ACT. TAKEN [Halo. N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [16] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ] ~~S - Soil~~
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T - 6 M - S B - S
((Y)es/(G)reater/(L)ess)

PH [ ] M 13
OXIDIZER (Y/N) [ ] M - N
CYANIDE (Y/N) [ ] M - N

SULFIDE (Y/N) [ ] M - N
BIC (Y/N) [ ] T - C, M - N, B - C
CHLORINE (Y/N) [N]

LABEL [F1 - N]
COMMENTS [3 phase Org - N]
LOCATION [ ] ACT. TAKEN [Halo - N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [17] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ] S - Soil
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [ ]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [19] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [ ]
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [19] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T-L, B-Y
((Y)es/(G)reater/(L)ess)

PH [ ] B-12
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] T-C, B-N
CHLORINE (Y/N) [ ]

LABEL [Fl-N]
COMMENTS [2 phase Halo-N]
LOCATION [ ] ACT. TAKEN [Org-N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [21] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] L/S/S
((Y)es/(G)reater/(L)ess)

PH [ ] 7
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] T-C, M-C, B-C
CHLORINE (Y/N) [ ]

LABEL [Fl-N]
COMMENTS [3 phase Org-N]
LOCATION [ ] ACT. TAKEN [Halo-N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [22] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T L , B S
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] T-C , B-C
CHLORINE (Y/N) [ ]

LABEL [Fl - N]
COMMENTS [2 phase Org - N]
LOCATION [ ] ACT. TAKEN [Halo - N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [23] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T-L , B,M-S
((Y)es/(G)reater/(L)ess)

PH [ ] BM-10 ,
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] T-C, MB-N
CHLORINE (Y/N) [ ]

LABEL [Fl. N]
COMMENTS [3 phase Org. N]
LOCATION [ ] ACT. TAKEN [Halo N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [24] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T-S , B-S
((Y)es/(G)reater/(L)ess)

PH [ ] 11
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] T-C , B-C
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [25] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] comb.
CHLORINE (Y/N) [ ]

LABEL [Fl - N]
COMMENTS [Org - V]
LOCATION [ ] ACT. TAKEN [Halo - N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [27] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] S
((Y)es/(G)reater/(L)ess)

PH [ ] 12
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

LABEL [Fl - N]
COMMENTS [Org - N]
LOCATION [ ] ACT. TAKEN [Halo - N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [28] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] S
((Y)es/(G)reater/(L)ess)

PH [ ] 12
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [ ] N

SULFIDE (Y/N) [ ] N
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [same as 27]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [29] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] S
((Y)es/(G)reater/(L)ess)

PH [ ] 12
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [Same as 28]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [30] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ]
((Y)es/(G)reater/(L)ess)

PH [ ] 11
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [8]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [31] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] S
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

Fl. N
Org. N
Halo. N

LABEL [ ]
COMMENTS [~~2 phase~~ 1 phase w/ sediment]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [32] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] S
((Y)es/(G)reater/(L)ess)

PH [ ] 12
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

LABEL [Fl N]
COMMENTS [Org. N]
LOCATION [ ] ACT. TAKEN [Halo N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [34] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] S
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] T-C, B-N
CHLORINE (Y/N) [ ]

LABEL [Fl - N]
COMMENTS [2 phase w/ sediment Org. N]
LOCATION [ ] ACT. TAKEN [Halo - N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [33] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T-L, B-S
((Y)es/(G)reater/(L)ess)

PH [ ] 13
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] T-C, B-N
CHLORINE (Y/N) [ ]

LABEL [Fl - N]
COMMENTS [2 phase w/sed. Org. N]
LOCATION [ ] ACT. TAKEN [Halo. N]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [35] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Y-T+B
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] N-Top + Bot
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [36] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y] T+B
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N] T+B
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [37] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] slightly - Top Y - middle
((Y)es/(G)reater/(L)ess)

PH [11]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [ ] T-No Middle-No
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [3 phase (bot. is sed.)]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [38] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]
MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)
SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [10]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]
SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [single phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [40] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]
MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)
SOLUBLE (Y/G/L) [T] T-No Bot. - N
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]
SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] T - Yes Bot - No
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phases + sediment]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [39] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]
MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)
SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [12]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]
SULFIDE (Y/N) [N]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [single phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [41] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Bot - Y Top - slightly
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] Bot. - N Top - Y
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [42] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [12]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [N]

SULFIDE (Y/N) [N]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [single phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [81] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [ ]
((S)olid/(L)iquid/(G)as) 2 phase

SOLUBLE (Y/G/L) [ ] T-Sl.Sol., B. Y
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [ ]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] B-N, T-Comb.
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [ ]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [44] (A)ll/(T)op/(B)ottom   SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]   MATERIAL [ ]
SIZE (Gallons) [ ]   ((S)teel/(G)lass/(P)oly/(F)iber)
TOP (O)pen/(B)ung [ ]   CONDITION [ ]
AMOUNT (1=Full/0=Empty) [ ]   ((P)oor/(F)air/(G)ood)

MATRIX [L]   SOLUBLE (Y/G/L) [Y]
((S)olid/(L)iquid/(G)as)   ((Y)es/(G)reater/(L)ess)

PH [6]   SULFIDE (Y/N) [ ]
OXIDIZER (Y/N) [N]   BIC (Y/N) [ ] N
CYANIDE (Y/N) [ ]   CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [1 phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [45] (A)ll/(T)op/(B)ottom   SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]   MATERIAL [ ]
SIZE (Gallons) [ ]   ((S)teel/(G)lass/(P)oly/(F)iber)
TOP (O)pen/(B)ung [ ]   CONDITION [ ]
AMOUNT (1=Full/0=Empty) [ ]   ((P)oor/(F)air/(G)ood)

MATRIX [L]   SOLUBLE (Y/G/L) [Y]
((S)olid/(L)iquid/(G)as)   ((Y)es/(G)reater/(L)ess)

PH [1.9]   SULFIDE (Y/N) [ ]
OXIDIZER (Y/N) [N]   BIC (Y/N) [ ] N
CYANIDE (Y/N) [ ]   CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [1 phase]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [47] (A)ll/(T)op/(B)ottom   SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]   MATERIAL [ ]
SIZE (Gallons) [ ]   ((S)teel/(G)lass/(P)oly/(F)iber)
TOP (O)pen/(B)ung [ ]   CONDITION [ ]
AMOUNT (1=Full/0=Empty) [ ]   ((P)oor/(F)air/(G)ood)

MATRIX [L] w/cloudy wh. precip.   SOLUBLE (Y/G/L) [Y] Top & bottom
((S)olid/(L)iquid/(G)as)   ((Y)es/(G)reater/(L)ess)

PH [1]   SULFIDE (Y/N) [ ]
OXIDIZER (Y/N) [N]   BIC (Y/N) [ ] N
CYANIDE (Y/N) [ ]   CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [Green liquid w/white precip]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [49] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [clear liquid]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [54] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7.0]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [clear liquid]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [55] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7.0]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] N
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [ ]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [56] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [cloudy wh. liquid]
COMMENTS [ ]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [57] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [ ]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [58] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ]Y
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [cloudy liq.]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [61] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [cloudy liq.]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [62] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [cloudy liq.]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [63] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Y-bott. - N-top
((Y)es/(G)reater/(L)ess)

PH [2-3] Top 2-3 bottom
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [Y] Top N-bot.
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase liq. (cloudy)]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [70] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [clear liq.]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [72] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T-No B-Yes
((Y)es/(G)reater/(L)ess)

PH [7] - bot.
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [ ] N - Top & B
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase (T oil/B clear liq.)]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [73] (A)11/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] T-No B-Yes
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N] T & B
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase (br. top, clear bot.)]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press (ESC) to QUIT.

STREAMLINE Data Entry

SAMPLE ID [74] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [ ] Y-Bot. No-Top
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N] T>B
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [2 phase same as 73, 72]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press <ESC> to QUIT.

STREAMLINE Data Entry

SAMPLE ID [75] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y] slightly
((Y)es/(G)reater/(L)ess)

PH [9]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [Bl. liq.]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press <ESC> to QUIT.

STREAMLINE Data Entry

SAMPLE ID [76] (A)ll/(T)op/(B)ottom SAMPLE TAKEN? [ ]

Container Attributes:
TYPE (V/D/C) [ ]
SIZE (Gallons) [ ]
TOP (O)pen/(B)ung [ ]
AMOUNT (1=Full/0=Empty) [ ]

MATERIAL [ ]
((S)teel/(G)lass/(P)oly/(F)iber)
CONDITION [ ]
((P)oor/(F)air/(G)ood)

MATRIX [L]
((S)olid/(L)iquid/(G)as)

SOLUBLE (Y/G/L) [Y]
((Y)es/(G)reater/(L)ess)

PH [7]
OXIDIZER (Y/N) [N]
CYANIDE (Y/N) [ ]

SULFIDE (Y/N) [ ]
BIC (Y/N) [N]
CHLORINE (Y/N) [ ]

LABEL [ ]
COMMENTS [clear]
LOCATION [ ] ACT. TAKEN [ ]
HAZARD CLASS [ ]

Press <ESC> to QUIT.

TDD No. 06-9004-09

ATTACHMENT 5

TEXAS WATER COMMISSION FILES

(63 pages)

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
John E. Birdwell, Commissioner
Cliff Johnson, Commissioner

John J. Vay, General Counsel
Michael E. Field, Chief Hearings Examiner
Brenda W. Foster, Chief Clerk

Allen Beinke, Executive Director

Direct Telecopy Number
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Date: 4-18-90

Telecommunication Cover Page

To: Steve Pierce
Person To Contact
Ecology & Env.
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LA
Town State
504-291-9607
Telefax Number

From: Terry James

Comments: Re: Odessa Drum

TOTAL NO. of pages transmitted 63 (including cover sheet).

Time: 10:45

Operator: Linda

PETROLEUM RESEARCH

Laboratories

MALONE TRUCKING COMPANY
P.O. BOX 709
TEXAS CITY, TEXAS 77590
ATTENTION: MR. PAUL HAMILTON

DATE: JANUARY 15, 1985
CERTIFICATE NO.: 22745
INVOICE NO.: 11407

SUBMITTED BY: MR. GEORGE MARTZ
SAMPLE DATE: NOT INDICATED
DATE RECEIVED: DECEMBER 30, 1985
DESCRIPTION: ODESSA DRUM CO, ODESSA, TEXAS - WASTE WATER

CORROSIVITY	pH = 13.5
IGNITABILITY (FLASH POINT)	>212°F
REACTIVITY	NONE
% SOLIDS	1 %

E P TOXCITY (METALS) MG/L *

ANALYSIS	RESULTS	DATE	TIME	ANALYST
ARSENIC EPA STORET 00997	<0.02	01/03	1330	MB
BARIUM EPA STORET 01007	<0.3	01/03	0830	MB
CADMIUM EPA STORET 01027	0.63	01/02	0900	AK
CHROMIUM EPA STORET 01034	9.6	01/02	0900	AK
MERCURY EPA STORET 71900	0.019	12/31	1000	KL
LEAD EPA STORET 01051	13.4	01/02	0900	AK
SELENIUM EPA STORET 01147	<0.01	01/03	1000	MB
SILVER EPA STORET 01077	0.08	01.02	0900	AK

Malone SERVICE COMPANY
INDUSTRIAL WASTE DISPOSAL AND RECLAMATION
P. O. BOX 709 21-21st STREET S.
PHONES 945-3301 ~ HOUSTON 487-0500
TEXAS CITY, TEXAS 77590

DATE 01/31/86

INVOICE NO. 100423

PURCHASE ORDER 0

TO

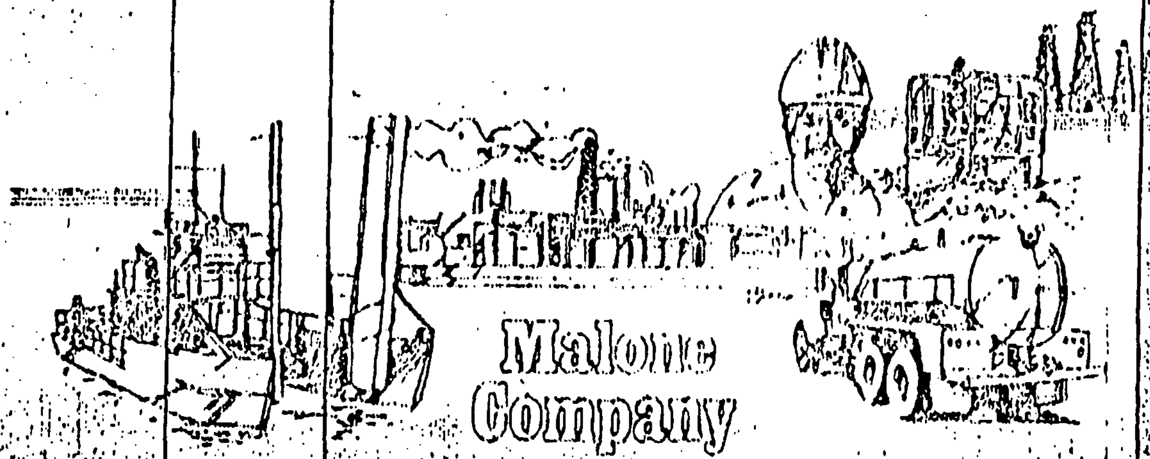
ODESSA DRUM CO., INC.
P.O. BOX 6787
ODESSA, TX. 79767
Attn: Frank Platt

FEDERAL ID. # 74-149421

PLEASE REMIT TO: P.O. BOX 709
TEXAS CITY, TEXAS 77590

PAYABLE TO MALONE SERVICE C(
03*2030 TERMS: NET CAS

DATE	SHIPPING NUMBER	RECEIVING NUMBER	JOB DESCRIPTION AS PER ATTACHED TICKETS	AMOUNT
01-15-86			LAB ANALYSIS:	550.00
			TOTAL	550.00



LEAD EPA STORET 01051	13.4	01/02	0900	AK
SELENIUM EPA STORET 01147	<0.01	01/03	1000	MB
SILVER EPA STORET 01077	0.08	01.02	0900	AK

CONTINUED ON PAGE TWO

SWL SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 W. Industrial Avenue (915) - 683-3348) • P.O. Box 2150 • Midland, Texas 79701

Client No. 3170200

File No. C-1950-X

Report No. 36845

Report Date 10-14-85

Date Received 9-20-85

Delivered By G. Gibson

Report of tests on: Waste

Client: Odessa Drum Company

Identification: Waste Sample

Flash Point (ASTM D-93)------------------Greater than 150° F.

Reid Vapor Pressure (ASTM D-323)-----------Less than 0.1 lbs.

Specific Gravity @ 70° F.---------------------------- 1.04

pH--------------- 13.24

Technician: CAG, GMB

Copies 3cc Odessa Drum Co.
Attn: Gary Gibson

SOUTHWESTERN LABORATORIES

Gary W. Burch

118904

Swl SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 W. Industrial Avenue (915-683-3348) • P.O. Box 2150 • Midland, Texas 79701

Client No. 3170200

File No. C-1950-X

Report No. 36845

Report Date 10-14-85

Date Received 9-20-85

Delivered By G. Gibson

Report of tests on: Waste

Client: Odessa Drum Company

Identification: Waste Sample

Total Hydrocarbons-- 14890 p.p.m.

Solvents-- 3164 p.p.m.

Benzene-------------------------- 2.8 p.p.m.
Toluene-------------------------- 441 p.p.m.
Xylenes-------------------------- 2720 p.p.m.

Halogenated Solvents------------------------------ 1.2 p.p.m.

Dichloromethane------------------- 0.1* p.p.m.
1,1,1,-Trichloroethane------------ 0.01* p.p.m.
Trichloroethylene----------------- 0.15 p.p.m.
Perchloroethylene----------------- 1.09 p.p.m.

Gasoline Range Hydrocarbons (C_1-C_9)- 187 p.p.m.

Diesel Range Hydrocarbons (C_{10}-C_{20})- 11540 p.p.m.

*Less than

Technician: JA

Copies 3cc Odessa Drum
Attn: Gary Gibson

SOUTHWESTERN LABORATORIES

Gary H. Bunch

SWL SOUTHWESTERN LABORATORIES
Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services
1703 W. Industrial Avenue (915-683-3348) • P.O. Box 2150 • Midland, Texas 79701

Client No. 3170200
File No. C-1950-X
Report No. 36845
Report Date 10-14-85
Date Received 9-20-85
Delivered By G. Gibson

Report of tests on: Waste
Client: Odessa Drum Company
Identification: Waste Sample

Flash Point (ASTM D-93)------------------Greater than 150° F.
Reid Vapor Pressure (ASTM D-323)-----------Less than 0.1 lbs.
Specific Gravity @ 70° F.-------------------------- 1.04
pH--------------- 13.24

Technician: CAG, GMB

Copies 3cc Odessa Drum Co.
Attn: Gary Gibson

SOUTHWESTERN LABORATORIES
Gary M. Burch

119904

SwL **SOUTHWESTERN LABORATORIES**

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 W. Industrial Avenue (915-683-3348) • P.O. Box 2150 • Midland, Texas 79701

Client No. 3170200

File No. C-1950-X

Report No: 27685

Report Date 7-29-85

Date Received 6-13-85

Delivered By G. Gibson

Report of tests on: Waste

Client: Odessa Drum

Identification: Waste Sample

D001 ------ Ignitibility -- Flash Point (ASTM D-93) is greater than 150°F. Waste does not exhibit the characteristic of Ignitibility as determined, Pensky-Martens Closed Cup Tester - greater than 140°F, Federal Register, 1980, Vol. 45, No. 98, Para. 261.21.

Technical Data

Parameter	mg/L
Phenol	38
Oil & Grease	10990
Cyanide	0.04
Sulfate	1518
Barium Less Than	0.5
Calcium	110
Total Suspended Solids @ 105°C	1000

pH------- 12.84

Technician: CAG, KLH, KDT

Copies: Odessa Drum
Attn: Frank Platt

SOUTHWESTERN LABORATORIES

Gary M Burch

PAGE TWO (2)

ANALYSIS	RESULTS	DATE	TIME	ANALYST
E P TOXICITY (PESTICIDES) MG/L *				
ENDRIN	<0.02	01/12	0800	KKL
2d5-TP	<1.0	01/12	0800	KKL
2d-D	<1.0	01/12	0800	KKL
LINDANE	<0.4	01/12	0800	KKL
METHOXYCHLOR	<2.0	01/12	0800	KKL
TOXAPHENE	<0.2	01/12	0800	KKL

* EXTRACTED ACCORDING TO FEDERALREGISTER 40 CFR PART 261 APPENDIX II

QUALITY ASSURANCE: THESE ANALYSES ARE PERFORMED IN ACCORDANCE WITH EPA GUIDELINES FOR QUALITY ASSURANCE. THESE PROCEDURES INCLUDE THE FOLLOWING AS MINIMUM REQUIREMENTS: COMPARISONS AGAINST KNOWN STANDARDS IN EACH RUN, ONE IN TEN SAMPLE SPLITS, AND A QUARTERLY METHODS REVIEW AGAINST KNOWN SPIKE SAMPLES.

A P R LABORATORIES

Sammy Russo

Sammy Russo

SR/eh

ANALYTICAL
PETROLEUM
RESEARCH

Laboratories

MALONE TRUCKING COMPANY
P.O. BOX 709
TEXAS CITY, TEXAS 77590
ATTENTION: MR. PAUL HAMILTON

DATE: JANUARY 15, 1985
CERTIFICATE NO.: 22745
INVOICE NO.: 11407

SUBMITTED BY: MR. GEORGE MARTZ
SAMPLE DATE: NOT INDICATED
DATE RECEIVED: DECEMBER 30, 1985
DESCRIPTION: ODESSA DRUM CO, ODESSA, TEXAS - WASTE WATER

CORROSIVITY	pH = 13.5
IGNITABILITY (FLASH POINT)	>212°F
REACTIVITY	NONE
% SOLIDS	1 %

E P TOXCITY (METALS) MG/L *

ANALYSIS	RESULTS	DATE	TIME	ANALYST
ARSENIC EPA STORET 00997	<0.02	01/03	1330	MB
BARIUM EPA STORET 01007	<0.3	01/03	0830	MB
CADMIUM EPA STORET 01027	0.63	01/02	0900	AK
CHROMIUM EPA STORET 01034	9.6	01/02	0900	AK
MERCURY EPA STORET 71900	0.019	12/31	1000	KL
LEAD EPA STORET 01051	13.4	01/02	0900	AK
SELENIUM EPA STORET 01147	<0.01	01/03	1000	MB
SILVER EPA STORET 01077	0.08	01.02	0900	AK

CONTINUED ON PAGE TWO

SOUTHWESTERN LABORATORIES

FORT WORTH · DALLAS · HOUSTON · MIDLAND · BEAUMONT · TEXARKANA

CONSULTING, ANALYTICAL CHEMISTS
AND TESTING ENGINEERS

Midland, Texas 11-5-80 File No. C-1950-W

Report of tests on Waste Sample

To Odessa Drum Company Date Rec'd. 10-8-80

Received from

Identification Marks Waste Sample, Total Effluent

	Water Phase	Organic Phase
pH	6.65	----
Specific Gravity	0.9902	0.8950
Total Dissolved Solids	4720 mg/L	----
Flash Point (ASTM D-93)	----	Greater than 230° F.

	Mixed Sample
Chromium	8.3 mg/L
BS&W	4% Sediment, 16% Water
Oil & Grease	316200 mg/L

Parts per million solids
Suspended

5000

3cc Odessa Drum

Lab. No. 25146

SOUTHWESTERN LABORATORIES
Jack H. Barton

WASTE ANALYSIS

****

MOBILE ANALYTICAL LABORATORIES
P.O. BOX 69210
ODESSA, TEXAS 79769-9210

****

MAY 03, 1989

MR. SHERRILL BROWN
ODESSA DRUM
P.O. BOX 12308
ODESSA, TEXAS 79768

DEAR MR. BROWN:

THE FOLLOWING ARE THE RESULTS OF THE ANALYSIS OF THE PAINT CHIPS RECIEVED 04-20-89, LAB NO. 534:

RESULTS OF EXTRACTION E-P TOXICITY, METHOD 1310

	YELLOW & WHITE SOLIDS	BLACK GRANULAR
ARSENIC	< 1 ppm	< 1 ppm
BARIUM	< 1 ppm	< 1 ppm
CADMIUM	< 1.0 ppm	< 1.0 ppm
CHROMIUM	3.2 ppm	14.2 ppm
LEAD	1.4 ppm	10.7 ppm
MERCURY	< .1 ppm	< .1 ppm
SELENIUM	< 1.0 ppm	< 1.0 ppm
SILVER	< 1.0 ppm	< 1.0 ppm

WE APPRECIATE THE OPPORTUNITY TO WORK WITH YOU ON THESE TESTS. IF YOU HAVE ANY QUESTIONS OR REQUIRE ANY FURTHER INFORMATION, PLEASE FEEL FREE TO CONTACT ME AT ANY TIME.

SINCERELY,

Walter Reid

WALTER REID

****
MOBILE ANALYTICAL LABORATORIES
P.O. BOX 69210
ODESSA, TEXAS 79769-9210
PHONE: 915-337-4744
****

MR. SHERRILL BROWN
ODESSA DRUM COMPANY, INC.
P.O. BOX 12308
ODESSA, TEXAS 79768

JANUARY 13, 1989

DEAR MR. BROWN:

THE FOLLOWING ARE THE RESULTS OF THE ANALYSES OF THE WATER FROM VAT FLUSH & RINSE, SAMPLE RECEIVED 12/29/89, LAB NO. 1712:

IGNITABILITY: THIS SAMPLE HAS A FLASH POINT OF GREATER THAN 210 DEG. F. THIS SAMPLE DOES NOT EXHIBIT THE CHARACTERISTIC OF IGNITABILITY.

CORROSIVITY: THIS SAMPLE HAS A pH OF 10.6. THE SAMPLE DOES NOT EXHIBIT THE CHARACTERISTIC OF CORROSIVITY.

REACTIVITY: THIS SAMPLE DOES NOT REACT VIOLENTLY WITH WATER. NO DETECTABLE AMOUNTS OF TOXIC GASES ARE GENERATED WHEN THE pH OF THE SOLUTION IS LOWERED TO 2. THIS SAMPLE DOES NOT EXHIBIT CHARACTERISTIC OF REACTIVITY.

E.P. METALS

CONTAMINANT	MAXIMUM CONCENTRATION mg/l	CONCETRATION OF ABOVE SAMPLE mg/l
ARSENIC	5.0	0.9
BARIUM	100.0	< 25.0
CADMIUM	1.0	2.7
CHROMIUM	5.0	112.0
LEAD	5.0	18.0
MERCURY	0.2	< 0.01
SELENIUM	1.0	4.8
SILVER	5.0	0.2

SINCERELY,

Walter Reid

WALTER REID
wr/jt

NOTE: SAMPLES CONTAINING HAZARDOUS AND TOXIC SUBSTANCES WILL BE RETURNED TO POINT OF ORIGIN FOR DISPOSAL. IF THIS IS NOT POSSIBLE AND MOBILE ANALYTICAL LABORATORIES HAS TO DISPOSE OF THE SAMPLE IN ACCORDANCE WITH EPA REGULATIONS, THEN ADDITIONAL CHARGES WILL BE BILLED TO COVER THE COST OF DISPOSAL OF THIS SAMPLE.

MOBILE ANALYTICAL LABORATORIES
P.O. BOX 69210
ODESSA, TEXAS 79769-9210
PHONE: 915-337-4744

MR. SHERRILL BROWN
ODESSA DRUM COMPANY, INC.
P.O. BOX 12308
ODESSA, TEXAS 79768

JANUARY 13, 1989

DEAR MR. BROWN:

THE FOLLOWING ARE THE RESULTS OF THE ANALYSES OF THE SLUDGE FROM VAT, SAMPLE RECEIVED 12/29/89, LAB NO. 1710:

<u>IGNITABILITY:</u> THIS SAMPLE HAS A FLASH POINT OF 98 DEG. F. THE SAMPLE DOES EXHIBIT THE CHARACTERISTIC OF IGNITABILITY.

<u>CORROSIVITY:</u> THIS SAMPLE HAS A pH OF 11.7. THE SAMPLE DOES NOT EXHIBIT THE CHARACTERISTIC OF CORROSIVITY.

<u>REACTIVITY:</u> THIS SAMPLE DOES NOT REACT VIOLENTLY WITH WATER. TOXIC GASES ARE GENERATED WHEN THE pH OF THE SOLUTION IS LOWERED TO 2, THEREBY GIVING THE SOLUTION THE CHARACTERISTIC OF REACTIVITY.

<u>E.P. METALS</u>

CONTAMINANT	MAXIMUM CONCENTRATION mg/l	CONCETRATION OF ABOVE SAMPLE mg/l
ARSENIC	5.0	1.5
BARIUM	100.0	< 25.0
CADMIUM	1.0	13.6
CHROMIUM	5.0	294.0
LEAD	5.0	500.0
MERCURY	0.2	< 0.01
SELENIUM	1.0	6.7
SILVER	5.0	0.5

SINCERELY,

Walter Reid

WALTER REID
wr/jt

NOTE: SAMPLES CONTAINING HAZARDOUS AND TOXIC SUBSTANCES WILL BE RETURNED TO POINT OF ORIGIN FOR DISPOSAL. IF THIS IS NOT POSSIBLE AND MOBILE ANALYTICAL LABORATORIES HAS TO DISPOSE OF THE SAMPLE IN ACCORDANCE WITH EPA REGULATIONS, THEN ADDITIONAL CHARGES WILL BE BILLED TO COVER THE COST OF DISPOSAL OF THIS SAMPLE.

Item #1

MOBILE ANALYTICAL LABORATORIES
P.O. BOX 69210
ODESSA, TEXAS 79769-9210
PHONE: 915-337-4744

MR. SHERRILL BROWN
ODESSA DRUM COMPANY, INC.
P.O. BOX 12308
ODESSA, TEXAS 79768

JANUARY 13, 1989

DEAR MR. BROWN:

THE FOLLOWING ARE THE RESULTS OF THE ANALYSES OF THE WATER FROM VAT FLUSH & RINSE, SAMPLE RECEIVED 12/29/89, LAB NO. 1712:

IGNITABILITY: THIS SAMPLE HAS A FLASH POINT OF GREATER THAN 210 DEG. F. THIS SAMPLE DOES NOT EXHIBIT THE CHARACTERISTIC OF IGNITABILITY.

CORROSIVITY: THIS SAMPLE HAS A pH OF 10.6. THE SAMPLE DOES NOT EXHIBIT THE CHARACTERISTIC OF CORROSIVITY.

REACTIVITY: THIS SAMPLE DOES NOT REACT VIOLENTLY WITH WATER. NO DETECTABLE AMOUNTS OF TOXIC GASES ARE GENERATED WHEN THE pH OF THE SOLUTION IS LOWERED TO 2. THIS SAMPLE DOES NOT EXHIBIT CHARACTERISTIC OF REACTIVITY.

E.P. METALS

CONTAMINANT	MAXIMUM CONCENTRATION mg/l	CONCETRATION OF ABOVE SAMPLE mg/l
ARSENIC	5.0	0.9
BARIUM	100.0	< 25.0
CADMIUM	1.0	2.7
CHROMIUM	5.0	112.0
LEAD	5.0	18.0
MERCURY	0.2	< 0.01
SELENIUM	1.0	4.8
SILVER	5.0	0.2

SINCERELY,

Walter Reid

WALTER REID
wr/jt

NOTE: SAMPLES CONTAINING HAZARDOUS AND TOXIC SUBSTANCES WILL BE RETURNED TO POINT OF ORIGIN FOR DISPOSAL. IF THIS IS NOT POSSIBLE AND MOBILE ANALYTICAL LABORATORIES HAS TO DISPOSE OF THE SAMPLE IN ACCORDANCE WITH EPA REGULATIONS, THEN ADDITIONAL CHARGES WILL BE BILLED TO COVER THE COST OF DISPOSAL OF THIS SAMPLE.

Item #2

MOBILE ANALYTICAL LABORATORIES
P.O. BOX 69210
ODESSA, TEXAS 79769-9210
PHONE: 915-337-4744

MR. SHERRILL BROWN
ODESSA DRUM COMPANY, INC.
P.O. BOX 12308
ODESSA, TEXAS 79768

JANUARY 13, 1989

DEAR MR. BROWN:

THE FOLLOWING ARE THE RESULTS OF THE ANALYSES OF THE SLUDGE FROM VAT, SAMPLE RECEIVED 12/29/89, LAB NO. 1710:

IGNITABILITY: THIS SAMPLE HAS A FLASH POINT OF 98 DEG. F. THE SAMPLE DOES EXHIBIT THE CHARACTERISTIC OF IGNITABILITY.

CORROSIVITY: THIS SAMPLE HAS A pH OF 11.7. THE SAMPLE DOES NOT EXHIBIT THE CHARACTERISTIC OF CORROSIVITY.

REACTIVITY: THIS SAMPLE DOES NOT REACT VIOLENTLY WITH WATER. TOXIC GASES ARE GENERATED WHEN THE pH OF THE SOLUTION IS LOWERED TO 2, THEREBY GIVING THE SOLUTION THE CHARACTERISTIC OF REACTIVITY.

E.P. METALS

CONTAMINANT	MAXIMUM CONCENTRATION mg/l	CONCETRATION OF ABOVE SAMPLE mg/l
ARSENIC	5.0	1.5
BARIUM	100.0	< 25.0
CADMIUM	1.0	13.6
CHROMIUM	5.0	284.0
LEAD	5.0	500.0
MERCURY	0.2	< 0.01
SELENIUM	1.0	6.7
SILVER	5.0	0.5

SINCERELY,

Walter Reid

WALTER REID
wr/jt

NOTE: SAMPLES CONTAINING HAZARDOUS AND TOXIC SUBSTANCES WILL BE RETURNED TO POINT OF ORIGIN FOR DISPOSAL. IF THIS IS NOT POSSIBLE AND MOBILE ANALYTICAL LABORATORIES HAS TO DISPOSE OF THE SAMPLE IN ACCORDANCE WITH EPA REGULATIONS, THEN ADDITIONAL CHARGES WILL BE BILLED TO COVER THE COST OF DISPOSAL OF THIS SAMPLE.

TWC Solid Waste Inpection Report
40CFR 262.34(c)(1)(2)
SATELLITE ACCUMULATION AREA CHECKLIST

TWC Reg. No. 31481

NOTE: Generators may accumulate HW in containers at or near the point-of-generation without a permit if they meet the following conditions.

***

1. Are containers in good condition? YES X NO ___
2. Is the waste compatible with the containers? YES X NO ___
3. Are containers kept closed (except when adding or removing waste)? YES ___ NO X
4. Are containers marked "hazardous waste" or labeled to identify the contents? YES ___ NO X
5. If waste accumulation has exceeded 55 gallons (or 1 qt. of acutely HW):
   a. Has container holding excess amount been marked with beginning date of excess accumulation? N/A X YES ___ NO ___
   b. Have excess amounts remained in satellite area over 3 days? N/A X NO ___ YES ___

COMMENTS: Drainable drum residues are drained into an open top 55 gallon drum. In the past, when 4-6 drums are accumulated a vacuum truck removes the waste from the open top drums and pumps the waste into bunged 55 gallon drums. The satellite accumulation area is adjacent to the internal drum rinsing facility (See Photo and Map).

*** An entry in this column indicates corrective action or comment is needed.

10/88

TWC Solid Waste Inpection Re t
40CFR 262.34(c)(1)(2)
SATELLITE ACCUMULATION AREA CHECKLIST

TWC Reg. No. 31481

NOTE: Generators may accumulate HW in containers at or near the point-of-generation without a permit if they meet the following conditions.

***

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2. Is the waste compatible with the containers? YES X NO ___
3. Are containers kept closed (except when adding or removing waste)? YES ___ NO X
4. Are containers marked "hazardous waste" or labeled to identify the contents? YES ___ NO X
5. If waste accumulation has exceeded 55 gallons (or 1 qt. of acutely HW):
   a. Has container holding excess amount been marked with beginning date of excess accumulation? N/A X YES ___ NO ___
   b. Have excess amounts remained in satellite area over 3 days? N/A X NO ___ YES ___

COMMENTS: Drainable drum residues from emptied hazardous waste containers are collected in an open top 55 gallon drum stored north of the Heater Treater. On June 16, 1989, the lid was not on the container when not in use and the container was not labelled "Hazardous Waste".

*** An entry in this column indicates corrective action or comment is needed.

10/88

TWC Solid Waste Inspection Report
(CFR 265.170-177)
CONTAINER STORAGE AREA CHECKLIST

TWC Reg. No. 31481

Reg. Facility No. None

Class of Wastes (H)

		***
1. Are containers in good condition?		YES X NO ___
2. Are the containers compatible with the wastes being stored?		YES X NO ___
3. Are containers kept closed and stored in a safe manner?		YES ___ NO X
4. Are containers inspected weekly for leakage and deterioration?		YES ___ NO X
*5. Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line?	N/A ___	YES X NO ___
6. Are containers holding incompatible wastes separated by a physical barrier or sufficient distance?	N/A X	YES ___ NO ___
7. Does the storage area have containment protection?	YES ___	NO X

Describe Container Storage Area: The container storage area is located on the east side of the drum processing facility (A1). Wastes stored at this site include unprocessed wastewater (H), processed wastewater (H) and processed waste oil (H). The containers are on wooden pallets stacked two high. No leaks were observed but many of the drums are dented. On the day of the inspection, there were 63 drums containing unprocessed wastewater, 63 drums containing processed wastewater and 151 drums containing processed waste oil. Of the unprocessed wastewater drums, 36 were dated 3/13/89 for an accumulation date. 27 drums of the unprocessed drums were not labelled with an accumulation start date.
Of the wastewater drums 27 were dated 3/13/89, 22 dated 2/27/89, 4 dated 4/20/89 and 10 had no accumulation start date.
Of the waste oil drums, 78 were dated 4/13/89, 44 were dated 4/18/89, 8 were dated 4/19/89, 4 were dated 4/20/89, and 17 were not dated with an accumulation start date.

NOTE: 90-Day accumulation rules are in TAC 335.69.
Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.
*** An entry in this column indicates corrective action or comment is needed.

TWC Reg. No. 31481

Reg. Facility No. None

Class of Wastes (H)

TWC Solid Waste Inspection Report
(CFR 265.170-177)
CONTAINER STORAGE AREA CHECKLIST

				***
1. Are containers in good condition?		YES X	NO	
2. Are the containers compatible with the wastes being stored?		YES X	NO	
3. Are containers kept closed and stored in a safe manner?		YES	NO X	
4. Are containers inspected weekly for leakage and deterioration?		YES	NO X	
*5. Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line?	N/A	YES X	NO	
6. Are containers holding incompatible wastes separated by a physical barrier or sufficient distance?	N/A X	YES	NO	
7. Does the storage area have containment protection?	YES	NO X		

Describe Container Storage Area: The container storage area is located on the east side of the facility (A2). Wastes stored at this site are the processed waste oils from the heater treater (H). The containers are stored on wooden pallets, some stacked two high. No leaks were observed but many of the drums were dented. On the day of the inspection, there were 145 drums stored at this location. Of the drums stored at the site, 60 were dated 3/13/89, 24 were dated 3/26/89, 32 were dated 3/27/89, 9 were dated 4/4/89 and 10 were not labelled with an accumulation start date. Many of the drums were not labelled "Hazardous Waste".

NOTE: 90-Day accumulation rules are in TAC 335.69.
Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.
*** An entry in this column indicates corrective action or comment is needed.

TWC Reg. No. 31481

Reg. Facility No. None

Class of Wastes (H)

TWC Solid Waste Inspection Report
(CFR 265.170-177)
CONTAINER STORAGE AREA CHECKLIST

		***
1. Are containers in good condition?		YES___ NO X
2. Are the containers compatible with the wastes being stored?		YES X NO___
3. Are containers kept closed and stored in a safe manner?		YES___ NO X
4. Are containers inspected weekly for leakage and deterioration?		YES___ NO X
*5. Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line?	N/A___	YES___ NO X
6. Are containers holding incompatible wastes separated by a physical barrier or sufficient distance?	N/A X	YES___ NO___
7. Does the storage area have containment protection?	YES___	NO X

Describe Container Storage Area: The container storage area is located on the east side of the facility (A3). Waste stored at this site are processed wastewater from the heater treater. During the inspection, the investigator attempted to collect samples from the wastewater drums, however, the drum contained approximately 70%oil/30% water. Sherrill Brown, Plant Supervisor, stated that the material in the heater treater was not allowed to cool for separating prior to transferring the waste to the drums. On the day of the inspection, there was a total of 221 drums stored at this location. Of the drums stored at this location 31 were dated 3/13/89, 38 were dated 3/22/89, 72 were dated 3/28/89, 43 were dated 4/4/89, 10 were dated 4/5/89, 9 were dated 4/20/89 and 10 had no accumulation date. There were 8 partially full drums of which 4 were dated 4/4/89, 3 dated 4/5/89 and 1 with no accumulation date. Many of the drums were not labelled "Hazardous Waste". The containers are also stored within 3 feet of a residential backyard.

NOTE: 90-Day accumulation rules are in TAC 335.69.
Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.
*** An entry in this column indicates corrective action or comment is needed.

TWC Solid Waste Inspection R. ,ort
(CFR 265.170-177)
CONTAINER STORAGE AREA CHECKLIST

TWC Reg. No. 31481
Reg. Facility No. None
Class of Wastes (H)

					***
1.	Are containers in good condition?		YES___	NO X
2.	Are the containers compatible with the wastes being stored?		YES X	NO___
3.	Are containers kept closed and stored in a safe manner?		YES___	NO X
4.	Are containers inspected weekly for leakage and deterioration?		YES___	NO X
*5.	Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line?	N/A___	YES___	NO X
6.	Are containers holding incompatible wastes separated by a physical barrier or sufficient distance?	N/A X	YES___	NO___
7.	Does the storage area have containment protection?	YES___	NO X	

Describe Container Storage Area: The container storage area is located on the east side of the facility (A4). Waste stored at this site are the unprocessed wastewater (H). During the investigation, one drum ruptured and leaked the entire contents onto the ground. Several others were observed leaking from the bungs or had no bungs present. There was a total of 281 drums stored at this location, 49 of which were dated 4/20/89 for an accumulat date. 232 drums had no accumulation start date. Many of the drums were dented or rusted and appeared to have questionable integrity. None of the drums were labelled "Hazardous Waste". The drums are also stored within 30 feet of the facilities east property line.

NOTE: 90-Day accumulation rules are in TAC 335.69.
Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.
*** An entry in this column indicates corrective action or comment is needed.

TWC Reg. No. 31481

Reg. Facility No. None

Class of Wastes (H)

TWC Solid Waste Inspection Report
(CFR 265.170-177)
CONTAINER STORAGE AREA CHECKLIST

		***
1. Are containers in good condition?		YES __ NO X
2. Are the containers compatible with the wastes being stored?		YES X NO __
3. Are containers kept closed and stored in a safe manner?		YES __ NO X
4. Are containers inspected weekly for leakage and deterioration?		YES __ NO X
*5. Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line?	N/A __	YES X NO __
6. Are containers holding incompatible wastes separated by a physical barrier or sufficient distance?	N/A X	YES __ NO __
7. Does the storage area have containment protection?	YES __	NO X

Describe Container Storage Area: The container storage area is located on the southwest side of the facility (A5). The drums are stored in a corrugated metal warehouse with a concrete floor. There are three entrances to the warehouse all of which are open. The drums are stacked two high. The drums on the bottom appeared to be bunged, however, the drums on top are open top drums with no lids. All of the drums contain processed waste-water (H). Sherrill Brown, Plant Supervisor and Oscar Torres, Shop Foreman, state that Mr. Frank Platt, Ex-Manager of the company, ordered the waste put in drums in the warehouse in April 1989. Sherrill Brown stated that he did not know the waste was in the warehouse. Odessa Drum representatives counted 427 drums of waste in the warehouse. There are no accumulation start dates or "Hazardous Waste" labels on the drums.

NOTE: 90-Day accumulation rules are in TAC 335.69.
Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.
*** An entry in this column indicates corrective action or comment is needed.

TWC Solid Waste Inspection Report
(CFR 265.170-177)
CONTAINER STORAGE AREA CHECKLIST

TWC Reg. No. 31481
Reg. Facility No. None
Class of Wastes (Unknown)

		***
1. Are containers in good condition?		YES___ NO X
2. Are the containers compatible with the wastes being stored?		YES X NO___
3. Are containers kept closed and stored in a safe manner?		YES___ NO X
4. Are containers inspected weekly for leakage and deterioration?		YES___ NO X
*5. Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line?	N/A X	YES___ NO___
6. Are containers holding incompatible wastes separated by a physical barrier or sufficient distance?	N/A X	YES___ NO___
7. Does the storage area have containment protection?	YES___	NO X

Describe Container Storage Area: This area has 10 drums containing an unknown oil waste (A6). The drums are open top with metal lids. The lids are not secured and can be removed easily. There is no secondary containment. The drum storage area is located on the west side of drum storage area warehouse A5.

NOTE: 90-Day accumulation rules are in TAC 335.69.
Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.
*** An entry in this column indicates corrective action or comment is needed.

TWC Solid Waste Inspection Report
(CFR 265.170-177)
CONTAINER STORAGE AREA CHECKLIST

TWC Reg. No. 31481
Reg. Facility No. None
Class of Wastes (Unknown)

				***
1. Are containers in good condition?			YES___	NO X
2. Are the containers compatible with the wastes being stored?	UNKNOWN		YES___	NO___
3. Are containers kept closed and stored in a safe manner?			YES___	NO X
4. Are containers inspected weekly for leakage and deterioration?			YES___	NO X
*5. Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line?		N/A X	YES___	NO___
6. Are containers holding incompatible wastes separated by a physical barrier or sufficient distance?		N/A X	YES___	NO___
7. Does the storage area have containment protection?		YES___	NO X	

Describe Container Storage Area: The drum storage area contains unknown oily waste. The containers are open top drums with metal lids that are not sealed (A7). The lids can be easily removed by hand and some of the lids have holes in them. The storage area has no secondary containment. The storage area is located on the southeast side of the facility. There are six drums stored at this location.

NOTE: 90-Day accumulation rules are in TAC 335.69.
Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.
*** An entry in this column indicates corrective action or comment is needed.

TT REG # 31481

TANKS CHECKLIST

SECTION A 265.191 - Question 2a (continued)

Note: At a minimum, this assessment must consider the following:

(1) design standard(s) according to which the tank and ancillary equipment were constructed.
(2) hazardous characteristics of the waste(s) that have been and will be handled.
(3) existing corrosion protection measures.
(4) documented or estimated age of the tank system (if available).
(5) results of leak test, internal inspections or other tank integrity examinations. ***

3. If the tank is non-enterable, did the assessment include a leak test ? N/A Yes ___ No ___

Note: At a minimum, the assessment should include the effects of:

a. temperature variation;
b. tank end deflection;
c. vapor pockets; and
d. High water table.

4. Is this written assessment kept on file at the facility ? Yes ___ No ___ N/A

5. Per 265.193(i) all tank systems, until such time as secondary containment is provided, must comply with the following:

a. For non-enterable underground tanks, was a leak test conducted at least annually ? N/A X Yes ___ No ___

and, or

b. For all other tanks and ancillary equipment, was a leak test, an internal inspection, or other integrity examination conducted at least annually ? N/A ___ Yes ___ No X

SECTION B. New Tank Systems (40 CFR 265.192)

1. Has the integrity of the tank system been reviewed and certified by an independent, qualified registered professional engineer ? Yes ___ No X

2. Does the assessment include the following information:

a. design standards according to which tank(s) and/or ancillary equipment are constructed; N/A Yes ___ No ___

*** An entry in this column indicates correction action or comment is needed.

TWC P~~ # 31481

TANKS CHECKLIST

SECTION B 265.192 - New tanks, Question 2 (continued)

***

b. hazardous characteristics of waste(s) to be handled; and N/A Yes ___ No ___

c. factors affecting potential for corrosion (for tanks in which external metal components of the tank will be in contact with soil) by a corrosion expert ? N/A Yes ___ No ___

Note: The factors affecting the potential for corrosion should include

1. Soil moisture content;
2. Soil pH;
3. Soil sulfides level;
4. Soil resistivity;
5. Structure to soil potential;
6. Influence of nearby underground metal structures (e.g. piping);
7. Existence of stray electric current;
8. Existing corrosion-protection measures (e.g. coating, cathodic protection); and
9. Type and degree of external corrosion protection.

d. was an analysis completed to determine that the underground tank system components will not be affected by vehicle traffic ? N/A Yes ___ No ___

e. was an analysis completed on the design considerations of each tank to ensure that the foundation will maintain a fully loaded tank and that system components are anchored to prevent flotation, dislodgement, or frost heave ? N/A Yes ___ No ___

3. Prior to covering the tank system, did an independent, qualified registered professional engineer inspect the tanks for the following:

a. weld breaks; N/A Yes ___ No ___

b. punctures; N/A Yes ___ No ___

c. scrapes of protective coating; N/A Yes ___ No ___

d. cracks; N/A Yes ___ No ___

e. corrosion; and N/A Yes ___ No ___

f. other structural damage or inadequate construction/installation ? N/A Yes ___ No ___

*** An entry in this column idicates corrective action or comment is needed.

 Revised 11/88

TWC ID # 31481

TANKS CHECKLIST

SECTION B 265.192 - New Tanks (Continued)

***

4. Were any components of the tank placed underground? Yes ___ No X

If yes,

a. Was backfill material a non-corrosive, porous, homogeneous substance that has been installed and compacted to ensure that the tank and piping are supported ? N/A Yes ___ No ___

5. Was the tank and ancillary equipment tested for tightness prior to being covered, enclosed, or placed in use ? Yes ___ No X

6. Was the NEW Tank(s) provided with secondary containment prior to being put into service (265.193(a)(1)) ? Yes ___ No X

SECTION C. Containment and Detection of Releases (40 CFR 265.193)

Note: For existing tanks storing F020-F023,F026-F027 (Dioxin Wastes), secondary containment is required within 2 years after Jan. 12, 1987. For all other existing tank systems secondary containment systems are required by Jan. 12, 1989, or 15 years from the date the tank was installed, whichever comes later. Enter the secondary containment due date for each tank in the Tank Table (if applicable).

1. Are any tanks situated inside a building with an impermeable floor ? Yes ___ No X

If yes,

a. Do these tanks contain hazardous waste without free liquids (265.190 (a)) ? N/A Yes ___ No ___

b. Was the Paint Filter Liquid Test used to demonstrate the absence or presence of free liquids (265.190 (a)) ? N/A Yes ___ No ___

Note: If #1a & 1b are both yes, then 265.193 of this checklist is not applicable for those tanks.

2. Are any tanks included as part of a secondary containment system used to collect or contain releases of hazardous wastes ? Yes ___ No X

Note: If #2 is yes, then 265.193 of this checklist is not applicable for those tanks.

3. Does the tank have a secondary containment system? Yes ___ No X

*** An entry in this column indicates corrective action or comment is needed.

REC # 31481

TANKS CHECKLIST

SECTION C 265.193 (continued)

4. Is the secondary containment system constructed of or lined with materials compatible with the wastes? Yes ___ No ___ N/A ***

5. Does the secondary containment system have a leak-detection system ? Yes ___ No ___ N/A

If yes,

a. Is the leak-detection system capable of detecting failure of the secondary containment or presence of releases of hazardous wastes within 24 hours ? Yes ___ No ___ N/A

6. Is the secondary containment system sloped and designed to drain and remove liquids resulting from leaks, spills, or precipitation ? Yes ___ No ___ N/A

a. Are spills removed from the secondary containment system within 24 hours ? Yes ___ No ___ N/A

NOTE: If the answer to #6a is no, the TWC Executive Director must be notified that spill clean-up can not be accomplished within 24 hours (respond to Section F, Question #2).

7. Does the secondary containment system include one (or more) of the following devices:

a. Liner (External to the tank); Yes ___ No X

NOTE: If concrete is used as the liner, then the regulation for vaults would apply (i.e., use of impermeable interior coating or lining, water stops, etc. that are compatible with the waste). Basis is, free of cracks or gaps?

If 7 a. is yes, is it:

(1). Designed or operated to contain 100 percent of the capacity of the largest tank ? N/A Yes ___ No ___

(2). Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system (unless the collection system is sufficient) ? N/A Yes ___ No ___

(3). Free of cracks or gaps ? N/A Yes ___ No ___

(4). Designed and installed to completely surround the tank and to cover all surrounding earth likely to come in contact with the waste (if released) ? N/A Yes ___ No ___

*** An entry in this column indicates corrective action or comment is needed.

Revised 11/15/88

TWC REG # 31481

TANKS CHECKLIST

SECTION C 265.193, Question 8 b (Vault - Continued)

***

b. Vault; Yes ___ No X

If yes, is it:

(1). Designed or operated to contain 100 percent of the capacity of the largest tank ? N/A Yes ___ No ___

(2). Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system (unless the collection system is sufficient) ? N/A Yes ___ No ___

(3). Constructed with chemical-resistant water stops in place at all joints (if any) ? N/A Yes ___ No ___

(4). Provided with an impermeable interior coating or lining that is compatible with the stored waste ? N/A Yes ___ No ___

(5). Provided with a means to protect against the formation of and ignition of vapors within the vault ? N/A Yes ___ No ___

c. Double-walled tank; Yes ___ No X

If yes, is it:

(1). Designed as an integral structure so that any release from the inner tank is contained by the outer shell ? N/A Yes ___ No ___

(2). Protected (if constructed with metal) from both corrosion of the primary tank interior and the external surface of the outer shell ? N/A Yes ___ No ___

(3). Provided with a built-in leak detection system capable of detecting a release within 24 hours or earliest practical time ? N/A Yes ___ No ___

d. OR if a, b, and c are all no, an equivalent device approved by the TWC Executive Director ? N/A ___ Yes ___ No X

8. Is the ancillary equipment provided with a secondary containment system (e.g. trench, jacketing, double-walled piping) ? Yes ___ No X

9. If needed, has the owner/operator obtained a secondary containment variance from the TWC Executive Director (265.193 (g)) ? N/A ___ Yes ___ No X

*** An entry in this column indicates corrective action or comment is needed.

TWC-EO # 31481

TANKS CHECKLIST

SECTION D General Operating Requirements (40 CFR 265.194)

CONDUCT A VISUAL INSPECTION of each Tank System. Look for any signs of leaks, cracks, deterioration, spills, overfills, etc. Document any problems with photographs and/or comments. This inspection should include questioning the operator about methods used to contain any visible releases. Also check the operating record for verification of release information and corrective action, and notification.

***

1. Has the owner/operator provided for prevention of the tank or ancillary equipment to rupture, corrode, or leak ? Yes ___ No X

2. Does the owner/operator use appropriate controls and practices to prevent spills and overflows from the tank or secondary containment system (i.e. spill prevention controls, maintenance of freeboard) ? Yes ___ No X

Section E Inspections (40 CFR 265.195)

1. Where present, does the owner/operator inspect the following at least daily:

   a. overfill/spill control equipment; N/A X Yes ___ No ___

   b. aboveground portions of tank system (if applicable) to detect corrosion or releases of waste; N/A ___ Yes ___ No X

   c. data gathered from monitoring and leak detection equipment to ensure that the tank is being operated according to design; and N/A X Yes ___ No ___

   d. construction materials and the area immediately surrounding the external accessible portions of tank system ? N/A ___ Yes ___ No X

2. Have cathodic protection systems been inspected and confirmed to be working properly within 6 months after initial installation and annually thereafter ? N/A Yes ___ No ___

3. Are all sources of impressed current inspected and/or tested at least bimonthly ? N/A Yes ___ No ___

4. Is the inspection information documented in the operating record ? Yes ___ No X

*** An entry in this column idicates corrective action or comment is needed.

TWC SPG # 31481

TANKS CHECKLIST

SECTION F Response to Leaks/Spills and Disposition of Leaking or Unfit for Use Tank Systems (40 CFR 265.196)

***

1. Have any tank systems or secondary containment systems had a leak or spill, or been determined to be unfit for use ? Yes X No ___

   If no, go to Closure Section of this checklist.

   If yes,

   a. Was the flow restricted from entering the tank system or secondary containment system ? Yes ___ No X

   b. Was a visual inspection to determine the cause of the release conducted and were measures taken to prevent further migration of the leak or spill onto soil/surface water ? Yes ___ No X

   c. What was the type and quantity of waste spilled ? Yes ___ No ___ SEE COMMEN

   d. Was the spill contained and cleaned immediately ? Yes ___ No X

2. Were all spills of greater than one pound of hazardous waste which were not immediately contained and cleaned up reported to the TWC Executive Director within 24 hours? Yes ___ No X SEE COMMENT

3. Have any releases to the environment been addressed (335.4) ? N/A ___ Yes ___ No X

   If yes or no,

   a. Has the owner/operator made the appropriate report to the TWC Executive Director within 30-days of detection of the release(265.196(d)(3) ? Yes ___ No X

4. Was the release to the environment from a component of a tank system which had no secondary containment ? Yes X No ___

   If yes,

   a. Was secondary containment provided prior to returning that component to service ? Yes ___ No X

*** An entry in this column idicates corrective action or comment is needed.

TWC-EG # 31481

TANKS CHECKLIST

SECTION F 265.196 (continued)

***

5. Has the owner/operator made extensive repairs to the tank system ? Yes ___ No X

If yes,

a. Has an independent, qualified, registered, professional engineer provided certification which states that the repaired system is capable of handling hazardous wastes without releases for the intended life of the system ? N/A Yes ___ No ___

b. Has this certification been sent to the TWC Executive Director within 7 days after returning the tank system to use ? N/A Yes ___ No ___

SECTION G. Closure and Post-Closure Care (40 CFR 265.197)

1. Does this facility's tanks include Exempt 90-day units ? Yes X No ___

If yes,

a. At closure did the generator remove all hazardous waste from the tank, discharge equipment, and discharge confinement structures ? N/A Yes ___ No ___

(1) and, was TWC notified at least 90-days prior to intended closure (335.6) ? N/A Yes ___ No ___

(2) Was approval for the closure obtained ? Yes ___ No ___ N/A

If No, and interim status or permitted tanks are present,

b. Does the closure plan specify that all hazardous waste and residue be removed from tanks, discharge control equipment, containment structures and ancillary equipment ? N/A Yes ___ No ___

c. Does the closure plan provide a contingent closure and post-closure care as a landfill, for tanks without secondary containment, except tanks on impervious floors inside buildings that do not manage wastes containing free liquids ? Yes ___ No ___ N/A

[In addition, the Closure Plan should be reviewed and the Closure Checklist must be completed. Provisions for closure cost estimate is to be adjusted and financial assurance must also be provided.]

*** An entry in this column idicates corrective action or comment is needed.

TWC REG # 31481

TANKS CHECKLIST

SECTION H Special Requirements for Ignitable or Reactive Wastes (40 CFR 265.198)

1. Have ignitable or reactive wastes been placed in tank systems ? Yes X No ___ ***

   If yes,

   a. Has the waste been treated, rendered, or mixed before or immediately after placement in tank systems to no longer meet the definition of ignitable or reactive waste; Yes ___ No X

   OR

   b. Has the waste been stored or treated such that it is protected from any material or condition that might cause it to ignite ? Yes ___ No X SEE COMMEN

   OR

   c. Is the tank used solely for emergencies ? Yes ___ No X

   d. Does the tank meet the distance requirements from public ways (streets, alleys, adjoining property line) according to the chart in Table 2-1 through 2-6 of the National Fire Protection Association (Incorporated by reference, See 260.11) ? Yes ___ No X SEE COMMENT

SECTION I Special Requirements for Incompatible Wastes (40 CFR 265.199)

1. Are incompatible wastes placed in tank systems ? Yes ___ No X

   If yes,

   a. Are wastes handled in such a way as to prevent generation of extreme heat, pressure, fire, explosion, violent reaction or any means to threaten human health or the environment ? Yes ___ No ___ N/A

2. Has the tank been decontaminated prior to placing an incompatible waste in it ? Yes ___ No ___ N/A

SECTION J Waste Analysis and Trial tests (40 CFR 265.200)

1. In addition to Waste Analysis required by 265.13, does the owner/operator conduct waste analyses and trial treatment or storage tests when the tank system is used to store or treat a hazardous waste which differs from the previous waste ? Yes ___ No ___ N/A

*** An entry in this column idicates corrective action or comment is needed.

IW[illegible]G # 31481

TANKS CHECKLIST

SECTION J 265.200 ***

2. OR; Did the owner/operator obtain written, documented information on similar waste under similar operating conditions to show that the proposed treatment or storage will meet general operating requirements ? Yes ___ No ___ N/A

Note this is the end of the Interim Status checklist. If permitted units are included in the facility, add the Permitted Checklist.

*** An entry in this column idicates corrective action or comment is needed.

TWC [illegible]# 31481

TANKS CHECKLIST

TANKS TABLE

FOR ALL TANKS:

(@) Tk Fac Status	Tk Cap	Tk Identity	NOR Fac#	Location	New or Exist. Tk	Date put into Svc / Date due 2d Cont.	Wastes Handled (NOR Waste (stream #) / Violation of Rules, list with Section & Q# only.
E	2000 g	B4 5.3'x12'	07	East of the drum processing facility	Exist	1970 / 1/12/89	Drum Washwater 001 / 265.191, 265.194, 265.196 265.198
E	1880 g	Heater Treater	08	East of the drum processing facility	New	11/07/86 / 11/07/86	Drum Washwater 001 / 265.191, 265.192, 265.194, 266.196, 265.199
E	2115 g	Above Ground Tank	017	East of the drum processing facility	Exist	1970 / 1/12/89	Drum Washwater / 265.191, 265.194, 165.195, 265.198

NOTE: @ Idetify tanks as to Facility status, ie. P-permitted, I-interim status, E-exempt 90-day stg, S-small quantity generator, and NH-non-hazardous.

TWC Reg. No. 31481
Checklist Tanks

COMMENTS SHEET

Section 1 / All tanks with the exception of the heater treater do not have a documentable age. The company has no records to indicate when these tanks were put into service as waste facilities. The company does not have a documentable age of the heater treater. It was not in operation during the 1985 inspection but was operational during the November 7, 1986 inspection, therefore, the investigator is assigning November 7, 1986 as the date the heater treater was put into service.

Section D-1 / Tank B1 has a leak around the weld of the east spigot. The waste has leaked onto the ground around the nozzle (See Photo).

Section D-2 / Several of the tanks (See Photos) appear to have been overfilled or allowed to discharge as witnessed by stains on the tank or stained soil and vegetation around the tank.

Section E-1(b)(d)(4) / The company states that they inspect the tank daily, however, active leaks were documented (See Photos) at tanks B1 and the heater treater. Evidence of discharges from other tanks was also documented. The company maintains an "Inspection Log" but it is vague and incomplete. None of the releases observed were recorded in the "Inspection Log".

Section F-1(a) / The company continued to use the heater treater even though there were leaks present from the tank and associated ancillary equipment.

TWC Reg. No. 31481
Checklist Tanks

COMMENTS SHEET

Section F-1(b) / The company wrapped an inner tube around one leaking pipe and put drip pans under other leaks. No efforts were made to repair the leaks.

Section F-1(c) / Raw drum wastewater.

Section F-2 / The drip pans at B1 and the Heater Treater contained several gallons of leaked waste. The Commission was not notified.

Section H-1(b) / The tanks have surface lids or bungs all of which were open to the atmosphere during the inspection.

Section H-1(d) / Tanks B3 and B4 are stored approximately 15 feet from a neighborhood backyard.

TJ		HV
RL		TM
TP		BB
CC		
		BL BL

DW0550

TEXAS WATER COMMISSION
NOTICE OF REGISTRATION
SOLID WASTE MANAGEMENT

05-08-89

THIS IS NOT A PERMIT AND DOES NOT CONSTITUTE AUTHORIZATION OF ANY WASTE MANAGEMENT ACTIVITIES OR FACILITIES LISTED BELOW. REQUIREMENTS FOR SOLID WASTE MANAGEMENT ARE PROVIDED BY TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TEXAS WATER COMMISSION (TWC). CHANGES OR ADDITIONS TO WASTE MANAGEMENT METHODS REFERRED TO IN THIS NOTICE REQUIRE WRITTEN NOTIFICATION TO THE TWC.

DATE OF NOTICE: 04-24-89 REGISTRATION DATE: 04-09-79

REGISTRATION NUMBER: 31481 EPA I.D. NUMBER: TXD008012254

THE REGISTRATION NUMBER PROVIDES ACCESS TO STORED INFORMATION PERTAINING TO YOUR OPERATION. PLEASE REFER TO THAT NUMBER IN ANY CORRESPONDENCE.

COMPANY NAME: ODESSA DRUM COMPANY, INC.
P.O. BOX 12308
ODESSA, TEXAS 79768-2308
GENERATING SITE LOCATION:
~~SAME~~ 2214 [illegible] Street, Odessa
CONTACT PERSON: ~~FRANK PLATT~~ [illegible] Brown
PHONE: (915) 366-4454
NUMBER OF EMPLOYEES: LESS THAN 100
TWC DISTRICT: 10

RECEIVED
MAY 11 1989
FIELD OPERATIONS
DISTRICT 10

REGISTRATION STATUS: ACTIVE
REGISTRATION TYPE: GENERATOR
HAZARDOUS WASTE STATUS:
GENERATOR

I. WASTE GENERATED:

WASTE NUMBER	DESCRIPTION	CLASS	CODE	DISPOSITION
001	WASHWATER, DRUMS	III	~~107380~~	ON-SITE/OFF-SITE
002	OIL, WASTE	III	910450	ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS):

WASTE NUMBER	DESCRIPTION	CLASS	CODE	DISPOSITION
~~003~~	~~OIL, WASTE~~	~~I~~	~~110450~~	~~ON-SITE / SOLD FOR RECOVERY~~
004	PLANT REFUSE, GENERAL MISC.	II	279760	ON-SITE/OFF-SITE
005	CONTAINERS, EMPTY	II	279660	OFF SITE

006	CONTAINERS, EMPTY	I	179450	OFF-SITE
007	SOIL, CONTAMINATED	I	170490	OFF-SITE
008	SLUDGE, HEAVY METAL CONTAINING	IH	940080	OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D001, D006, D007, D008

009 Processed washwater, Drums 1H on-site / off-site
010 Paint Chips 1NH on-site / off-site

II. Shipping/Reporting: Pursuant to Section 335 of the Texas Administrative Code of the rules of the TWC pertaining to Hazardous Waste management, issuance of manifests and annual reporting are required for Off-site Storage/Processing/Disposal of the following wastes listed in Part I. All manifested wastes should be reported on the annual waste summary report and submitted to the TWC by the 25th of each January for the prior calendar year.

011 Paint Chips H on-site / off-site

001	107380	WASHWATER, DRUMS
002	910450	OIL, WASTE
006	179450	CONTAINERS, EMPTY
007	170490	SOIL, CONTAMINATED
008	940080	SLUDGE, HEAVY METAL CONTAINING
009		Processed ~~washwater~~ washwater, Drums
010		Paint chips
011		Paint Chips

III. ON-SITE WASTE MANAGEMENT FACILITIES:

	FAC NO.	FACILITY	STATUS
Heater Treater	01	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 001, 002, 003	ACTIVE
02 Never operational	~~02~~	~~TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 001, 002, 003~~	~~ACTIVE~~
Tank 61	03	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 001	ACTIVE
Same tank as 03	~~04~~	~~TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 001~~	~~ACTIVE~~
Tank 62	05	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) ~~002, 003~~ (001)	ACTIVE

REGISTRATION NUMBER: 31481
COMPANY NAME: ODESSA DRUM COMPANY, INC.

B3 06 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) ~~002~~, ~~003~~ 001

B4 07 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) 001, ~~004~~

Heater Treater 08 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) ~~002~~, ~~003~~ 001

A1 09 CONTAINER STORAGE AREA ACTIVE
STORAGE
OF WASTE NUMBER(S) 001, 002, ~~003~~, ~~004~~ 009

UNLESS OTHERWISE STATED ABOVE, FACILITIES ARE LOCATED
AT SAME
COUNTY OF ECTOR

IV. RECORDS.

A. FOR PURPOSES OF FILING ANNUAL REPORTS PURSUANT TO TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TWC PERTAINING TO INDUSTRIAL SOLID WASTE MANAGEMENT, RECORDS SHOULD BE MAINTAINED FOR STORAGE, PROCESSING AND/OR DISPOSAL OF THE FOLLOWING WASTE(S) LISTED IN PART I:

001 107380 WASHWATER, DRUMS
002 910450 OIL, WASTE
003 110450 OIL, WASTE

006 Containers Empty
007 Soil, Contaminated
008 Sludge, Heavy Metals
009 Processed Washwater, Drums
010 Paint Chips
011 Paint Chips

A2 010 Container Storage Area Active
Storage
of Waste Number 002

A3 011 Container Storage Area Active
Storage
of waste Number 009

A4 012 Container Storage Area Active
Storage
of waste Number 001

A5 013 Container Storage Area Active
Storage
of waste Number 001

A6 014 Container Storage Area Active
Storage
of Waste Number - UNKNOWN

~~[illegible]~~

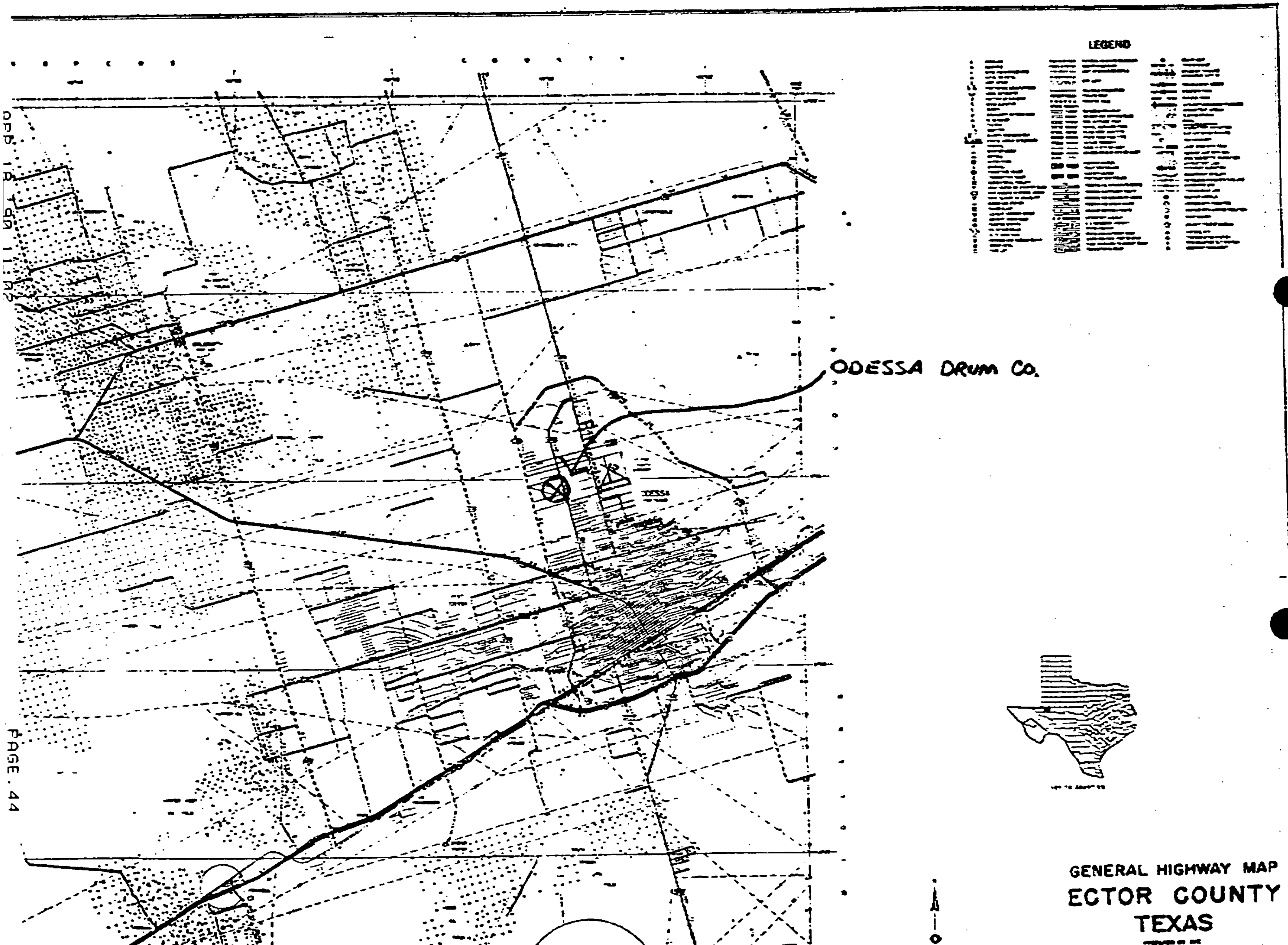
Continue

17 015 Container Storage Area Storage of Waste Number - UNKNOWN | Active

016 Container Storage Area Storage of Waste Number 010, 011 | Active

017 Tank (Chlorine ...) Storage 001 | Active

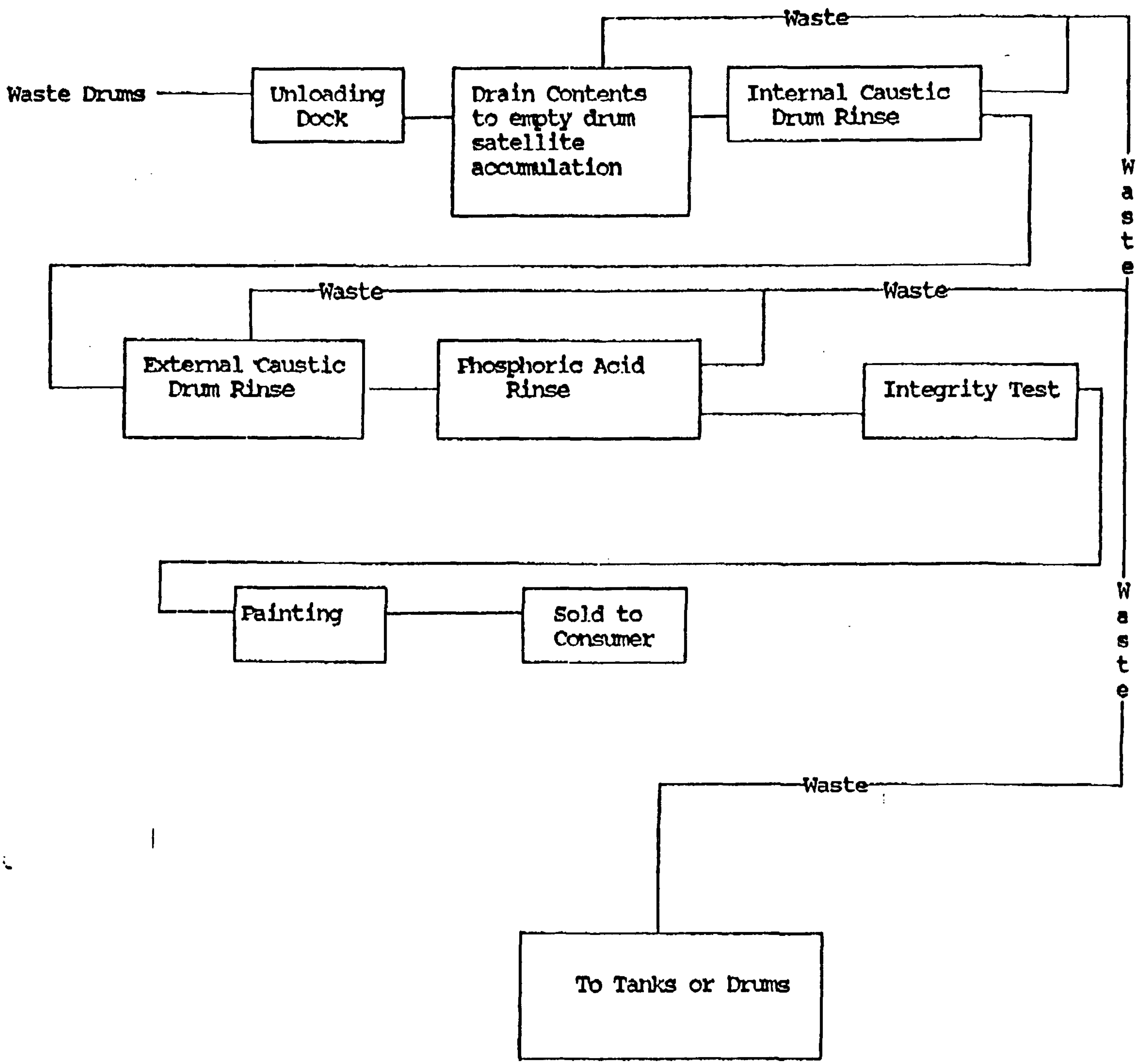
COUNTY MAP


LEGEND
ODESSA DRUM Co.
ODESSA
GENERAL HIGHWAY MAP
ECTOR COUNTY
TEXAS

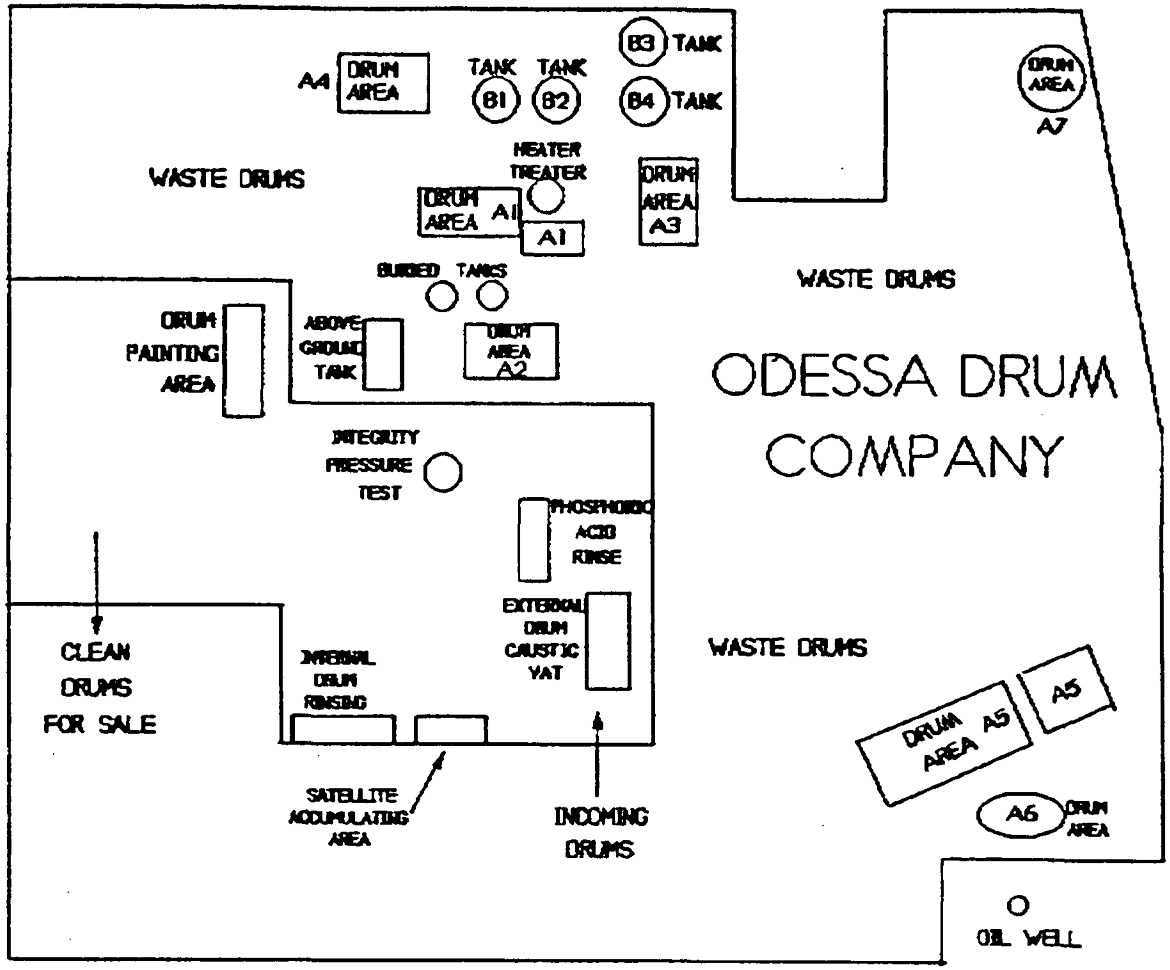
FLOW CHART

Odessa Drum Company, Inc.

FLOW CHART FOR ODESSA DRUM



FACILITY MAP


ODESSA DRUM COMPANY
WASTE DRUMS
A4 DRUM AREA
TANK B1
TANK B2
B3 TANK
B4 TANK
DRUM AREA A7
HEATER TREATER
DRUM AREA A1
A1
DRUM AREA A3
WASTE DRUMS
BURIED TANKS
DRUM PAINTING AREA
ABOVE GROUND TANK
DRUM AREA A2
INTEGRITY PRESSURE TEST
PHOSPHORIC ACID RINSE
EXTERNAL DRUM CAUSTIC VAT
WASTE DRUMS
CLEAN DRUMS FOR SALE
INTERNAL DRUM RINSING
DRUM AREA A5
A5
SATELLITE ACCUMULATING AREA
INCOMING DRUMS
A6 DRUM AREA
OIL WELL

ODESSA DRUM, INCORPORATED PHOTOS

1. Facing South - Photo shows drum storage area A1. This site contains 277 drums containing liquid wastes. The site contains 63 drums of raw wastewater, 63 drums of processed wastewater and 151 drums processed waste oil. (Processed waste means that the oil has been separated from the raw wastewater in a heater treater and then the separated oil or water is stored in separate containers).

2. Facing North - Photo shows drum storage area A1. The heater treater used to segregate the oil and water is seen on the far right of the photo.

3. Facing South - Photo shows drum storage area A2 (White & Gray Drums). This site contains 145 drums of processed waste oil.

4. Facing North - Photo shows drums storage area A2. Note "Hazardous Waste" labels.

5. Facing West - Photo shows drum storage area A2. Note "Hazardous Waste" labels.

6. Facing South - Photo shows drum storage area A3. This site was supposed to contain drums of processed wastewater, however, during sampling it was revealed that all the drums sampled contained a 70% oil/30% water mixture. There were 221 drums stored at this location.

7. Facing East - Photo shows drum storage area A3. Photo shows discolored soils under and near drums in the southwest corner of drum storage area possibly indicating a drum leak in the past.

8. Facing Southeast - Photo shows drum storage area A4. This drum storage area contains 281 drums of unprocessed raw wastewater.

9. Facing East - Photo shows drum storage area A4. May of the drums are stored on the bare ground and are unlabelled and in disorderly arrangement.

10. Facing South - Photo shows a ruptured drum on the north side of drum storage area A4. When this photo was taken the drum was 70% empty.

11. Facing South - Photo shows the bottom of the same ruptured drum in Photo No. 10 in drum storage area A4.

12. Facing South - Photo shows a leaking drum (Black Drum) in the middle of drum storage area A4.

13. Photo shows unprocessed waste leaking from the bung of a drum in drum storage area A4.

14. Photo shows unprocessed waste leaking from a damaged bung opening on a drum in drum storage area A4.

15. Photo shows an opened bung on a drum in drum storage area A4.

16. Facing South - Photo shows the north door of warehouse drum storage area A5. The warehouse is located on the southwest portion of the Odessa Drum facility. There was 427 drums (Odessa Drum count) of waste stored in the warehouse. the drums are stacked two high. The drums on the bottom appear closed with bungs in place. The drums on top are open top barrels with no lids exposing the contents. All of the full drums in the warehouse contain unprocessed waste. Mr. Sherrill Brown, Plant Supervisor, stated he did not know the drums were in the warehouse.

17. Facing Southwest - Photo shows warehouse drum storage area A5.

18. Facing Northeast - Looking in the west door of warehouse drum storage area A5. The 55 gallon drums contain unprocessed waste. The smaller gray containers are old empty military army water cans.

19. Facing Southeast - Looking in the west door of the warehouse drum storage area.

20. Facing North - Photo shows drum storage area A6. This site contains 15 drums of unknown oil waste material. The drums are open top barrels with loose lids.

21. Photo shows three drums in drum storage area A6 with loose lids full of waste oil materials.

22. Photo shows the oil/water level indicating glass and associated spigot on the heater treater. On the day of the inspection, the spigot was leaking waste material.

23. Photo shows some of the associated piping from the heater treater. The pipe at the top had experienced a leak, was wrapped with an innertube and a bucket placed underneath it.

24. Photo shows a leaking valve and a catch bucket from the heater treater.

25. Facing Northeast - Photo shows associated inlet (black hose) and outlet (red hose) piping of the heater treater.

26. Facing South - Photo shows where two concrete underground tanks are buried. The tanks were used to store unprocessed waste. The tanks are located between the concrete slab on the right and drum storage area A1 on the left.

27. Facing North - Photo shows the east end of tank B1. The photo attempts to show that the manhole on the top of the tank is open to the elements. Mr. Sherrill Brown, Plant Supervisor, stated that the tank was empty when in fact it was full of unprocessed waste.

28. Facing Northwest - Photo shows Tank No. B2.

29. Facing South - Photo shows the ground at the west end of Tank B1. The soils are stained at this site possibly indicating a spill from the tank in recent history.

30. Photo shows the discharge valve on the east end of Tank B2. The weld surrounding the crack is leaking waste to the ground.

31. Facing Northwest - The photo shows Tank No. B2. At the time of the inspection, the tank appeared empty.

32. Facing West - The photo shows Tank B3. On the day of inspection, the tank was partially full as witnessed by visible liquid in the bottom of the tank. amount of waste in the tank is unknown.

33. Photo shows the south end of Tank No. B3. Stained soils and dead vegetation suggest a recent release from the spigot of Tank No. B3.

34. Facing South - The photo shows Tank No. B4. On the day of the inspection, Mr. Sherrill Brown, Plant Supervisor, stated that the tank was not in use but in fact was full of unprocessed waste.

35. Facing South - Photo shows oil stained soils and stains on Tank No. B4 suggesting recent release from Tank No. B4.

36. Photo shows the manhole on Tank No. B4. The manhole is attached to the tank by a nut and bolt loose enough to allow people to slide the cover open. Photo also shows the waste material in the tank.

37. Photo shows unprocessed wastes on the top and sides of the tank possibly spilled during filling operations.

38. Facing Northwest - Photo shows the Miscellaneous Trash Area. Only paper, wood and metal wastes should be placed in this waste management unit.

39. A close-up photo of the Miscellaneous Plant Trash Area showing oil and water in the containers.

40. Facing North - The photo shows the Paint Chips Drum Storage Area (INH). The drums are open top barrels and all were sealed with lids.

41. Photo shows a "Nonhazardous Waste" label on one of the drums in the paint chips drum storage area.

42. Facing West - Photo shows a possible "sump" on the east side of the drum reconditioning facility. On the day of the inspection, the "sump" was full of discolored water. The "sump" appears to be a barrel buried in the ground.

43. Photo shows a close-up of the "sump" on the east side of the drum reconditioning facility.

44. Photo shows a drum located on the southwest portion of the drum storage yard. The drum has a hazardous waste label on it from B.J. Titan in Louisiana, however, the waste description states the material was a nonhazardous waste.

45. Facing Southeast - Photo shows drum storage area A7 which is located on the southeast portion of the drum storage yard. The drums contain unknown wastes.

46. Photo shows the top of one of the drums in drum storage area A7. Waste material in the drum can also be seen in the photo.

47. Photo shows the top of one of the drums in drum storage area A7.

48. Photo shows a shipment of drums that has arrived at the Odessa Drum facility. All of the drums are nonreuseable.

49. Photo shows a plastic drum that has just arrived at the Odessa Drum facility. The plastic drum is split across the middle.

50. Facing East - Photo shows drums stored on the north portion of the Odessa Drum facility. It is unknown if the drums are empty or full.

51. Facing North - Photo shows drums stored on the north portion of the Odessa Drum facility. It is unknown if the drums are empty or full.

52. Facing Southeast - Photo shows drums stored on the north portion of the Odessa Drum facility. It is unknown if the drums are full or empty.

53. Photo shows an empty toxic materials drum located on a winch truck on the Odessa Drum facility. The drum possibly indicates that the Odessa Drum facility has received drums containing residues of acutely toxic chemicals.

54. Photo shows a black drum located under the above ground diesel tank on the east side of the drum reconditioning area. The drum is full of unknown materials.

55. Facing North - The photo shows two drums that are full of unknown material adjacent to the paint booth.

56. Photo shows a full drum of unknown material near the paint chips drum storage area.

57. Facing North - Photo shows a black drum "149" stored near the Paint Chips Drum Storage Area. The drum is an open barrel that is full of an unknown waste material. The waste was spilling over the sides at the time of the inspection.

58. Photo shows a close-up of the drum described in Photo #57.

59. Facing East - Photo shows a black drum "736" stored near the Paint Chip Drum Storage Area. The drum is an open top barrel full of unknown waste material. The waste had recently spilled from the drum to the ground.

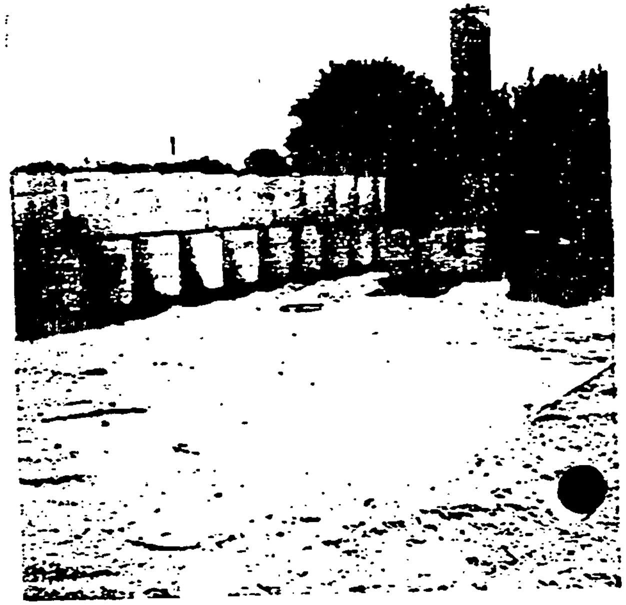
Photos Odessa Drum Company, Inc.
Page 5

60. Photo shows a drum leaking an unknown waste material near the drum described in Photo #59.

61. Facing West - Photo shows a white open top drum located on the east side of the drum reconditioning area near the above ground diesel fuel tank. The drum was approximately 2/3 full of an unknown waste material.

62. Photo shows the contents of the drum described in Photo #61.

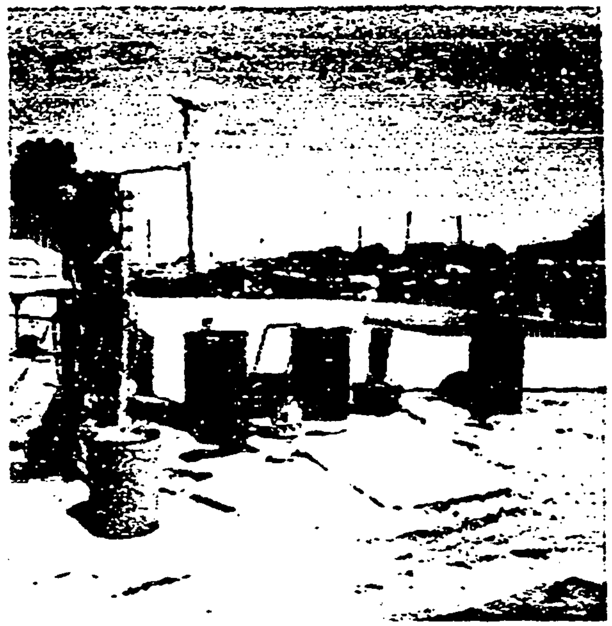
Drum Storage Area A5 Odessa Drum #2



Drum Storage Area A1 Odessa Drum

Drum Storage Area A3 Odessa Drum

Drum Storage Area A3 Odessa Drum #6



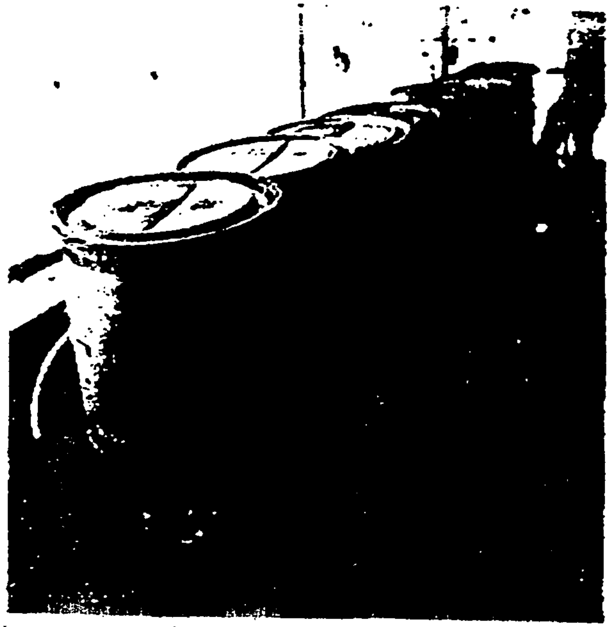
Tank Storage Area Odessa Drum

Tanks in C+3 Odessa D

Tanks in E+56 Odessa Drum

Waste Water Treatment Odessa Drum

Drum Storage Area A2 Odessa Drum



Texas Water Commission

INTEROFFICE MEMORANDUM

TO : Files DATE: July 6, 1989

THRU : Ernest W. Heyer, Chief, Program Services Unit, Field Operations Division

FROM : Terry James, District 10 - Odessa, Field Operations Division

SUBJECT: Odessa Drum Company, Incorporated, Solid Waste Registration No. 31481, Follow-Up Inspection, June 7, 1989

I. Introduction

A. Inspection Background

The following participants were present during the inspection: 1) Terry James, Field Investigator, District 10; 2) Richard Wilson, acting Plant Manager, Odessa Drum; 3) Sherrill Brown, Plant Supervisor, Odessa Drum and Oscar Torres, Shop Foreman, Odessa Drum. The site inspection and review of records was conducted from June 7, 1989 to June 16, 1989. The site is located in northwest Odessa at 2214 Alice Street.

B. General Facility and Waste Process Information

Odessa Drum Company, Incorporated is an industrial drum recycler. The company receives waste chemical drums from local industries such as oilfield service companies. The drums are drained, cleaned internally and externally, integrity tested, painted and sold as chemical drums. The drums that do not pass the integrity tests are either sold as trash barrels or sent to a shredder and metal reclaimer. Odessa Drum Company also accepts waste drums from companys for cleaning and off-site disposal. The bad metal drums are sent to a shredder and metal reclaimed while the bad plastic drums are kept on-site until sold for trash drums or boat dock floats. Odessa Drum Company uses a caustic internal/external rinse and a phosphoric acid rinse in their process. During the rinsing procedure, the rinsate becomes contaminated with chemical residues from the drums. The rinsewater must be changed on a frequency that is related to the volume of drums cleaned. A review of the companys waste management records indicates the company generates approximately 5,000 gallons of waste rinsate water monthly. Recent and historical laboratory analysis indicates that the waste rinsate water is periodically hazardous for corrosivity and flashpoint and is consistently hazardous for EP Toxic metals (See Attached Analysis). The company stores the waste rinsate water on-site in tanks or drums at numerous storage sites. The company then attempts to separate the oil from the water in an effort to reuse some of the water. The separated oil and water are stored in either containers or tanks prior to off-site shipment. Since February 1989 to the first week of June 1989, company records indicate that 38,350 gallons of waste was generated. Of that amount 12,535 gallons of waste was disposed of. Company records indicate that of the amount disposed 2,750 gallons was waste rinsate water, however, the company could not produce any manifests to document the disposal. An on-site inventory of the raw waste rinsate water and processed wastewater and oil currently stored on-site is approximately 81,390 gallons which is stored in four tanks and 1,367 fifty-five gallon drums indicating that at least 43,040 gallons was generated and stored on-site prior to February 1989. The company also generated a sludge from the drum rinsing tanks and a recent analysis of this waste indicates a low flashpoint (98 F) and EP Toxic concentrations of metals. Paint chips from drums and from the paint booth are also generated. Recent company analysis reveals nonhazardous levels of EP Toxic metals from the drum paint chips while the paint booth paint chips (Black Granular) revealed hazardous concentrations of EP Toxic metals. The company also generates miscellaneous plant trash that is stored in containers prior to off-site disposal. There are also numerous containers of unknown waste materials stored on-site. Samples of the waste rinsate water have been collected by the investigator and sent to the TDH Laboratory in Austin for analysis. As of the date of this memo, the analytical results are pending.

C. Surrounding Land Use

The site is located outside of the Odessa City Limits to the northwest in Ector County. The company site is surrounded by a residential neighborhood. Drum Storage Area A3 is located within three feet of a residential backyard with several children playing in the backyard. There were several releases documented from storage site A3 during the inspection. There were numerous areas of 335.4 and Chapter 26.121 violations occurring throughout the plant site. Stormwater run-off from the west and south portion of the facility exit the property on the west and south side of the facility into a roadside barrow ditch. Stormwater run-off from the east side of the facility drains in a diffused pattern to a paved road on the east side of the facility. The underlying aquifer is the Trinity Edwards in which the company and all surrounding residents acquire their water. The exact depth and groundwater direction at the facility is unknown, however, in most areas of the immediate region the groundwater is approximately 80' to 120' feet in depth and flows in a southeast direction.

D. Background

The following is a compliance history of the facility since December 17, 1985 to present.

December 17, 1985 - An inspection of records of Odessa Drum revealed that Odessa Drum was shipping waste off-site to RRC jurisdiction injection wells and disposal pits. Odessa Drum was documenting the shipment as "Empty Barrels" when in fact they were bulk loads of wastes, whereas, 1

"Empty Barrel" was equivalent to 1 barrel of waste. Of the 2,520 barrels of waste disposed of 625 barrels are still unaccounted for and the disposal site is unknown. The material that was disposed of is the drum rinsate water that has been shown to be characteristically hazardous and contains elevated levels of EP Toxic metals.

February 18, 1986 - District 10 refers the case to Austin for formal Enforcement Action.

April 3, 1986 - TWC analysis of the waste drum rinsate water stored in tank no. 3 revealed a flashpoint of 45 C and a pH of 13.2 S.U.

April 17, 1986 - Documents were obtained from Proler International in Vinton, Texas near El Paso showing that Odessa Drum had received waste caustic from Proler International at $1.00 a load. Two loads were received with a total of 94,980 lbs of caustic being delivered to Odessa Drum for $2.00.

November 7, 1986 - TWC District 10 representatives conducted an industrial solid waste compliance inspection of the company. An NOV was issued to the company on December 4, 1986 for violations of TAC 335.62 and 335.6.

June 16, 1987 - Second notice of noncompliance was sent to the Company for the November 7, 1986 industrial solid waste inspection.

November 29, 1988 - The investigator conducted an industrial solid waste compliance inspection of the facility. Numerous TAC violations were documented (See memo dated December 19, 1988).

December 19, 1988 - An NOV is sent to Odessa Drum Company concerning violations documented during the November 29,1989 inspection.

January 17, 1989 - NOV response letter is received from the Company (See Attached Copy).

June 7, 1989 - Follow-Up Inspection

II. Summary of Alleged Violations

1. TAC 335.62 - Hazardous Waste Determination

Liquid wastes (rinsate) after oil/water separation and numerous unidentified wastes.

2. TAC 335.6 - Notification Requirements - Waste Streams

See attached revised industrial solid waste registration No. 31481.

3. TAC 335.6 - Notification Requirements - Waste Management

See attached revised industrial solid waste registration No. 31481.

4. TAC 335.4/Chapter 26.121 - General Prohibitions

Numerous waste discharges or potential discharges (See Comments in Generators Checklist).

5. TAC 335.13(b) - Recordkeeping and Reporting

Failure to prepare a monthly summary.

6. TAC 335.9(a)(1) - Recordkeeping

See Generators Comments.

7. TAC 335.69(A)(1)(2)(3);(b) - Accumulation Time

Container storage areas not complying with TAC 335.112(A)(8), no date clearly marked on containers, not labelled "hazardous waste" and wastes are stored on-site for longer than 90 days.

8. TAC 335.69(d) - Accumulation Time

Violation of 40 CFR 265.173 - Container Management. The drum of the satellite accumulation area for drum drainings is an open top drum that is not sealed while storing wastes.

9. TAC 335.6(a) - Notification Requirements

Failure to notify the TWC of the closure of two underground waste tanks located at the facility.

10. TAC 335.112(a)(1) - Personnel Training

The program is deficient in the requirements of 40 CFR 265.16(a)(3)(III)(IV)(VI).

11. TAC 335.112(a)(2) - Preparedness and Prevention

Lack of fire, spill control, and decontamination equipment, adequate fire water supply, aisle space, and notify local authorities.

12. TAC 335.112(a)(3) - Contingency Plan

Lack of evacuation plans as required by 40 CFR 265.52(f).

13. TAC 335.112(a)(8) - Container Management

Containers not in good shape, not closed or inspected and storing ignitable wastes within 15 meters from the facility's property line.

14. TAC 335.122(a)(9) - Tanks Management

40 CFR 265.191(a) - Assessment of Tank Integrity.

15. TAC 335.122(a)(9) - Tanks Management

40 CFR 265.192 - New Tank Systems

16. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.193 - Containment and Detection of Releases

17. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.194 - General Operating Requirements

18. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.195 - Tank Inspections

19. TAC 335.112(a)(9) - Tanks Management

40 CFR 265.196 - Response to Leaks or Spills

20. TAC 335.122(a)(9) - Tanks Management

40 CFR 265.198 - Special Requirements for Ignitable or Reactive Wastes

The only violation resolved from the November 29, 1988 inspection and December 19, 1988 NOV was the TAC 335.62 violation for Hazardous Waste Determination.

III. Other Areas of Concern

Photos of recent plant operations are included with the inspection report as well as present and past waste analysis. District 10 is submitting this report to the Hazardous and Solid Waste Enforcement Section for escalated enforcement action to be considered as a high priority violator.

This is submitted for information only.

Terry James

William F. Lockey,
District Manager

DEPARTMENT OF WATER RESOURCES TDWR-0849

NO. SW 14483

District 10 Org. No. 330 Work No. 5320 Lab TDH

JUN 15 1989

Site Name Odessa Drum Company

Site Location 2310 Rice Street Odessa TX

County [illegible] Basin Colorado

Method of Collection Using a clean glass 13 mm OD hollow rod T.J. in and into the liquid of the drum. Thumb placed over the top opening of the rod, rod lifted from the drum and poured into a clean glass jar.

Point of Collection A drum labeled "waste water" at a drum storage area south of the heater treater "Gun Barrel"

Type facility: ☒ Drum; ☐ Tank; ☐ Impoundment; ☐ Landfill ☐ Waste pile; ☐ Landfarm; ☐ Other

Time Collected 2:15 (am/pm) Date Shipped 6/12/89

Add. COC #s

ODOR: ☒ Yes; ☐ No; Describe Petroleum

RECEIVED AUG 16 1989 FIELD OPERATIONS DISTRICT 10

T.J. (Collector's Signature)

S.W. Registration (1–9)	Permit Number (10–18)	Page No. (19–21)	22	Mo. (23–24)	Day (25–26)	Yr. (27–28)	29
51-61				06	09	89	6

30 Code	35 Parameter Value	44 Code	49 Parameter Value	58 Code	63 Parameter Value 71

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0849

NO. SW 14483

District 10 Org. No. 330 Work No. 5320 Lab TDH

Material Sampled: ☐ Solid waste (W); ☒ Liquid waste (L); ☐ Soil (E); ☐ Well (M); ☐ Stream (S); ☐ Other (O)

Comments Please run EP Toxicity for the metals listed for the water fraction only. Quote sampling difficulties [illegible] the flashpoint was exceeded.

(continued on back)

Lab Only Date rec'd AUG 3 1989 cmpltd AUG 9 1989 Analyst sign.: [illegible]

Preservation: ☐ None; ☒ Ice; ☐ H_2SO_4; ☐ HNO_3

Other AUG 15 1989

Auxiliary Tags

☐ LEACHATE: ☒ EP Toxicity Series; TDWR

30 Code	35 Parameter Value	44 Code	49 Parameter Value	58 Code	63 Parameter Value 71
pH	unable to separate a water fraction	Arsenic	mg/kg	Mercury	mg/kg
00403			2.4		0.052
COD		Barium		Selenium	
00340			7.7		<1.5
TOC		Cadmium		Silver	
00680			<1.0		<1.0
GC/MS		Chromium			
			125		
Flashpoint (°C)		Lead		←Total metals as per E. Reyes	
	65		354		6-21-89

Rpt 1-1202

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0849

NO. SW 14484

District 10 Org. No. 330 Work No. 5320 Lab TDH

Site Name Odessa Drum Company

Site Location [illegible] Black Street, Odessa, TX

JUN 15 1989

County [illegible] Basin Colorado

Method of Collection [illegible] Submerging a clean 3 mm OD glass rod into a [illegible] over the top opening of the rod, rod was [illegible] the drum and the contents drained into a clean [illegible]

Point of Collection unlabeled drum at the "unprocessed waste" storage area northeast of the heater treater "Gun Barrel"

Type facility: ☒ Drum; ☐ Tank; ☐ Impoundment; ☐ Landfill ☐ Waste pile; ☐ Landfarm; ☐ Other

Time Collected 4:00 (am/pm) Date Shipped 6/12/89

Add. COC #s

ODOR: ☒ Yes; ☐ No; Describe Petrochemical

S.W. Registration	Permit Number	Page No.		Date Mo.	Day	Yr.	
9	10 18	19 21	22	23 24	25 26	27 28	29
[illegible]				06	09	89	L

Tilley James (Collector's Signature)

RECEIVED AUG 16 1989 FIELD OPERATIONS DISTRICT 10

30 Code	35 Parameter Value	44 Code	49 Parameter Value	58 Code	63 Parameter Value

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0849

NO. SW 14484

District 10 Org. No. 330 Work No. 5320 Lab TDH

Material Sampled: ☐ Solid waste (W); ☒ Liquid waste (L); ☐ Soil (E); ☐ Well (M); ☐ Stream (S); ☐ Other (O)

Comments [illegible] run EP Toxicity for the metals listed below on the EP [illegible] water fraction only. Due to sampling difficulties only [illegible] was obtained (continued on back)

Lab Only Date rec'd: [illegible] AUG 9 1989 compl: [redacted]

Analyst sign.: [illegible]

Preservation: ☐ None; ☐ Ice; ☐ H_2SO_4; ☐ HNO_3 Other

Auxiliary Tags AUG 3 1989

☐ LEACHATE: ☒ EP Toxicity Series; TDWR

30 Code	35 Parameter Value	44 Code	49 Parameter Value	58 Code	63 Parameter Value 71
2/3 * Unable to separate a water fraction		Arsenic	mg/kg	Mercury	mg/kg
00403			1.4		0.054
COD		Barium		Selenium	
00340			19		<2.0
TOC		Cadmium		Silver	
00680			<1.0		<1.0
GC/MS		Chromium			
			24		
Flashpoint	(°C) 63	Lead	112	* Total metals as per E. Hagan	6-21-89

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0849

NO. SW 14482

District 10 Org. No. 330 Work No. 5320 Lab TDH

Site Name [illegible] Company

Site Location [illegible] Street Odessa, TX

County [illegible] Basin Colorado

Method of Collection Submerging a clean 13mm OD glass rod into a [illegible] placed on the top opening of the rod, rod was [illegible] and the contents drained into a clean [illegible] lined lid.

Point of Collection A drum labeled "Waste Oil" at a drum storage site adjacent to the heater treater "Gun Barrel"

Type facility: ☒ Drum; ☐ Tank; ☐ Impoundment; ☐ Landfill ☐ Waste pile; ☐ Landfarm; ☐ Other

Time Collected 3:15 (am/pm) Date Shipped 6/12/89

Add. COC #s

ODOR: ☒ Yes; ☐ No; Describe Petrochemical

S.W. Registration	Permit Number	Page No.		Date Mo.	Day	Yr.	
1 — 9	10 — 18	19 — 21	22	23 24	25 26	27 28	29
[illegible]				0 6	0 9	8 9	C

Terry James
(Collector's Signature)

RECEIVED
AUG 16 1989
FIELD OPERATIONS DISTRICT 10

30 Code	35 Parameter Value	44 Code	49 Parameter Value	58 Code	63 Parameter Value

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0849

NO. SW 14482

District 10 Org. No. 330 Work No. 5320 Lab TDH

Material Sampled: ☐ Solid waste (W); ☒ Liquid waste (L); ☐ Soil (E); ☐ Well (M); ☐ Stream (S); ☐ Other (O)

Comments Please run EP Toxicity for metals listed below [illegible] if possible

(continued on back)

Lab Only — Date rec'd: AUG 9 1989; cmplt: [redacted]

Analyst sign.: [illegible]

Preservation: ☐ None; ☒ Ice; ☐ H_2SO_4; ☐ HNO_3

Other

Auxiliary Tags

☐ LEACHATE: ☒ EP Toxicity Series; ___ TDWR

7/31 LEO

30 Code	35 Parameter Value	44 Code	49 Parameter Value	58 Code	63 Parameter Value 71
pH 00403	Unable to separate a water fraction	Arsenic	1.8 mg/kg	Mercury	0.053 mg/kg
COD 00340		Barium	53	Selenium	<2.0
TOC 00680		Cadmium	<1.0	Silver	<1.0
GC/MS		Chromium	132		
[illegible]		Lead	539	* Total metals as per E. Hensen 6-21-89	

PAGE. 64

TDD No. 06-9004-09

ATTACHMENT 6

CHAIN OF CUSTODY RECORD

(2 pages)

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.: TFA-K
PROJECT NAME: ODESSA DRUM SITE

SAMPLERS: *(Signature)* R. FERRELL R. Ferrell
R. S. PIERCE RSPierce
~~J. DELLINGER~~ RSP

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BNA	VOA	Pesticides/PCBs	E.P. Tox METALS	Ignit/pH	Cyanide/Sulfide	REMARKS
S1001	4/26	1800	X		STAINED AREAS ON LEASE PROPERTY	3	X	X	X	X	X	X	6-01470 SOIL
OD1002	4/26	1830	X		45, 47, 63	1	X	X	X	X	X	X	6-01471 LOW pH (<2)
~~[illegible]~~	~~4/27~~			~~X~~	~~ADJACENT RESIDENT'S WELL~~	~~4~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~6-01480, 81, 82 WATER~~ RSP
OD1008	4/26	1830	X		2, 5, 34, 52, 21, 25, 13, 31, 24	1	X	X	X	X	X	X	6-01477
OD1009	4/26	1830	X		6, 14, 22, 10, 15, 23	2	X	X	X	X	X	X	6-01478

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Ray E. Ferrell RSPierce	4/27/90 0830	James M. Dellinger			
James M. Dellinger					

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
				FED. EX. AIRBILL # 8232787345

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6-16494

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.: TFA-K
PROJECT NAME: ODESSA DRUM SITE

SAMPLERS: (Signature) R. FERRELL [signature]
~~R.S. PIERCE~~ RFF
~~J. DELLINGER~~ RFF

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	BNA	VOA	Pesticides/PCBs	E.P. Tox. Metals	Ignit/pH	Cyanide/Sulfide	REMARKS
OD1ØØ3	4/26	1830	X	–	1, 9, 8, 16, 33, 19	1	X	X	X	X	X	X	6-Ø1472 HIGH pH (>12)
OD1ØØ4	4/26	1830	X		32, 30, 38, 39, 42, 37, 36 [illegible]	1	X	X	X	X	X	X	6-Ø1473 HIGH pH (>10)
OD1ØØ5	4/26	1830	X		41, 40, 81, 75, 12, 7, 11	1	X	X	X	X	X	X	6-Ø1474 81, 82
OD1ØØ6	4/26	1830	X		29, 4, 3, 28, 27	1	X	X	X	X	X	X	6-Ø1475
OD1ØØ7	4/26	1830	X		73, 74, 72, 70, 44, 62, 55, 58, 61, 5[illegible]	1	X	X	X	X	X	X	6-Ø1476
OD1Ø1Ø	4/26	1830	X		77, 78, 80	2	X	X	X	X	X	X	6-Ø1479

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4/27/9Ø Ø83Ø	James M. Dellinger			
James M. Dellinger	4/27/90 1Ø3Ø				

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				FED. EX. AIRBILL # 497119196Ø

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6-16492

I. HEADING

Date: 05/01/90
From: OSC Greg Fife
To: Director, ERD and Region 6
Subject: Odessa Drum Company, Odessa, Ector County, TX
POLREP: POLREP # 1

II. BACKGROUND

Site No.: Z2
Response Authority: CERCLA
NPL Status: non-NPL

II. INCIDENT INFORMATION

A. Situation

Odessa Drum Company (ODC) is an inactive drum recycling facility located in Odessa, Ector County, TX. The site, which closed in 1989, consists of 10 acres of company owned land and five acres of leased property. The site is surrounded by a small community. The leased property contains approximately 10,000 fifty-five gallon drums of which an estimated 500 contain liquids. The property owned by ODC contains roughly 200,000 fifty-five gallon drums of which an estimated 5000 contain liquids, the remainder are empty or contain residual volumes. The company property also contains a large recycling building, a heat separator and seven storage tanks, two underground and five aboveground. When the company was in operation drums would enter the facility, residues would be removed, then drums would be washed with a caustic solution, integrity tested, painted, and sold as a recycled drum. This process generated wastes containing drum residues or caustic rinsate. An estimated 2000 full drums are believed to contain this waste.

B. Actions Taken

On 24-27 April 1990, TAT and OSC conducted an assessment of the site. An initial site reconnaissance was performed which included air monitoring, photodocumentation as well as video taping. TAT collected 80 randomly selected drum samples performed hazard categorization and submitted composite samples for analyses. The samples were sent to a commercial laboratory for analysis for Extraction Procedure for Toxic (EPTOX) metals, RCRA characteristics, polychlorinated biphenyls, pesticides, volatile and semi-volatile organics.

C. Future Plans

TAT will conduct validation upon receipt of the analytical results and wait futher instructions from the OSC.

D. Key Issues

None.

OSC Greg Fife and TAT representative Mark Ezell
Status of Case: Case Pending

E & E Job Number TS1313

Telephone Code Number ———

Site Name Odessa Drum Recyclers

State/City Odessa / Ector County / Texas

TDD 06-9004-09

PAN TTX112Ø5AA,

SSID

Start/Finish Date 4-21-90 / 4-30-90

Book 1 of 1

E & E Emergency Response Center: (716) 684-8940

4-20-90 (line above reads "lms") 06-9004-09

On 4-20-90 BATON Rouge La TAT start compiling information for Odessa Drum Recyclers site to prepare TAT site safety plan ~~and~~ ME, site materials and QASSP. —

TAT Team consists MARK EZEL (ME) Project manager, Jim Dellinger (JD) Site Safety officer & equipment Coordinator, Ray Ferrell (RF) Sampling Coordinator, Steve Pierce (SP) Project Director and Sampler. On this date site Safety plan is completed, QASSP is completed for OSC Greg Fife's review and equipment is packed for shipping on Monday 4-23-90. —

Site History: According to the Texas Water Commission (TWC) report dated July 6, 1989; Odessa Drum Company, incorporated is an industrial drum recycler. Odessa Drum Company will be refered to as ODC. ODC received waste chemical drums from local industries such as oilfield service companies. The drums are drained, cleaned internally and externally, integrity tested painted and sold as chemical drums. The drums that do not pass the integrity tests are either sold as trash drums or sent to a shredder and metal reclaimer. Plastic drums that are "bad" are kept on site until sold for trash drums or boat dock floats. ODC uses a caustic internal/external rinse and a phosphoric acid rinse in their process. The rinsate becomes contaminated with chemical residues and must be changed on a frequency that is related to the volume of drums cleaned. Past history indicates approximatly 5000 gallons of rinsate is generated monthly. The rinsate is periodically hazardous for corrosivity and flash point and is consistantly hazardous for EP toxic metals according to TWC. ODC stores the rinsate on site in tanks or drums at numerous storage sites. The Company then will separate the oil from the water in effort to reuse the water. The separated oil and water are stored in containers or tanks prior to off-site shipment. TWC reports from February 1989

Mark Ezell

4-21-90 06-9004-09

to the 1st week of June 1989, company records indicate that 39350 gallons of waste was generated. Of that amount 12,535 gallons of waste was disposed of. Company records indicate that the amount disposed 2750 gallons was waste rinsate water. An on site inventory of the raw waste rinsate, processed waste water and oil currently stored onsite is approximately 81,390 gallons which is stored in four tanks and 1,367 55 gallon drums. ODC also generated a sludge from the drum rinsing and paint chips from the paint booth. The company generates miscellaneous plant trash which is stored in containers prior to disposal. The site is located outside Odessa City limits to the Northwest in Ector County. The site is surrounded by residential neighborhood. The underlying aquifer is the Trinity Edwards in which all surrounding residence aquire their water. The exact depth of the aquifer is unknown however it is tipically 80 to 120 feet in depth and flows in a southeast direction.

JD and RF will depart Baton Rouge LA for Odessa Tx at approximatly 0730 to acquire mini van and cargo van along with expendable idems. ME and SP will depart Baton Rouge LA for Odessa Tx at approximatly 1345 to aquire LAB and ship materials and instrumentation before leaving Baton Rouge LA. All above TAT's will depart Baton Rouge LA on 4-23-90.

Mark Ezell

4

4-23-9 06-9004

TAT'S JD & RF arrive Odessa Tx at approx 1130. AIR for cascade system was aquire along with decon and other materials — TATS ME, SP, and (BM) Bob Margguccio arriv ODessA TX held right meeting to familarize everyone with sight.

Mark E [illegible]

4-09 4-24-90 06-9004-09

proximatly 0800 TATS JD, RF, SP, BM and ME meet for
ired breafast to discuss daily activities.

0845 Receive Fed Express packages

rive 920 TATs JD RF, SP, BM & ME make site drive by
ee and hospital visit.

1030 Met with TWC they said that they would meet us at the site. Refused to talk with us at this time

1045 Arrived at ODC met with Jerry C. Helms of Permian Drum & Container Co.

1116 ~~BM~~ ME Met with Bob Yates owner of property leased by ODC.

1120 TAT Safety meeting see site Safety ~~meett~~ ME meeting form dated 4-24-90

1145 TATS & OSC Break for lunch leave site.

1200 Received analytical TDD PO# 51394

1321 TATS (5) and OSC on site

1326 TATS RF and SP calibrate OVA EPA 415547
Camra that will be used on site EPA 724903 with 50mm lens
TATS RF and SP Calibrate HNU EPA # 645705
10.2 probe EPA# 645706
TAT BM calibrate O_2 explosimeter

1357 TATS RS, RF, BM and ME enter site for site recon photographing video Taping and Air monitoring OSC and TWC (Terry James)

1421 Periodic pH check ~~of~~ on liquid on site
pH of 10 on what is believe to be caustic vat

1424 VOA readings 5ppm on bung hole

1427 VOA 23 ppm at bung hole drum date 3-13-89

1439 VOA 200 ppm at bung hole, 90 ppm at bung hole

1444 pH at 11 on the ground by heater treater

1510 TATS OSC and TWC exit sight.

Mark Engel

6 4-24-90 06-4004

AMERA/
RIAL
TIME | SQ/

SU P/W

4-24-90

CAMERA/LENS Nikon N400 NS 50 mm lens

SERIAL # EPA 724903

TIME	SQ/FR#	RO			P/W
1401	1	1	ME/BM	KIDS Football	
1414	2	1	ME/BM	Brums in warehouse belie	
ME ~~1419~~	~~3-6~~	~~1~~	~~ME/BM~~	to contain sludge	
1419	3-6	1	ME/BM	PAD crushed drums stacke	
~~1423~~	~~7~~	~~1~~	~~ME/~~	drums	
1423	7	1		H.W. sticker	
1429	8	1		drum leaking over fill	
1434	9	1		man installing H_2O well	
1438	10	1		in his back yard	
				leaking drum	
1439	11			drum label	
1448	12			leaking Drum	
14 50	13			TAT w/ Hhu leaking drum	
14 56	14			oil on H_2O in berm	
1508	15			bubbling leaking drum	
1509	16			leaking drum	
1515	17			TAT sampling	
1520	18			TAT air monitoring bung	
1525	19			drums drying	

04-07 4-24-90 06-9004-09 7

Late Entry - It was obcerved by TAT the only reading on the OVA and Hnu was directly around bung holes. pH on standing water is 6 to 7 the higher pH's are concentrated inside drums Based on these observations TAT will down grade to ~~hard~~ me Level D hard hat booties, steel toe. Radmini showed no reading above back ground of (0.00) MR/hr

Mark Ezell

1600 Pierce, Marguccio, Ezell, Fife enter site to determine sample locations & scenario. Downgraded to Level D w/booties & hardhat due to lack of air contaminants found during recon. Drums to hazcat are marked w/a flourence paint slash.

1615 [redacted] said that the facility spilled a brown liquid with a strong caustic odor on his property adjacent to the plant boundary. This material & soil was excavated and backfilled with new soil. Removed soil was stockpiled on the leased property. The spillage also "burned" his dogs feet. Photos were supposedly taken by the facility owner. Spill date was 9/5/86.

1650 Pierce, Fife, Marguccio, Ezell exit site.

OSC requests TAT to investigate spill on ERNs database.

Late Entry -

Met at the hotel to discuss the next days activities. Meeting ended at 1800 hrs.

Mark Ezell

lieved

lced

d)

rum

bung hole

4-25-90 06-9004-09 4

0830 TATs BM, SP, JD, RF, ME, OSC Fife on site

0845 TAT SP talks with lab on the amount of sample that is needed..

0900 ~~JD~~ ME TATS JD, RF, BM unload van fill SCBA tanks organize equipment

0930 ~~Number~~ MS TATS ME, RF, SP JD numbered drums to be sampled and prepared sampling of drums

1038 TATS JD, SP prepare decon line
TAT RF calibration of OVA
TAT BM calibration of O_2/explosimeter

1040 TAT BM talking with TWC on aquiring more information

1048 TAT SP, RF, BM, JD dress out in level B w/hoods and silver shield gloves

1105 TATs stage sampling equipment around sample areas.

1125 TAT RF opens bungs on drums TAT BM monitor bung hole with OVA and O_2 explosimeter: TAT JD collect samples from drums.

1232 OVA flame goes out the Hnu is used inplace of OVA.

1254 TATs finish sampling drums ~~on~~ for this period

1315 TATs JD and BM ME collect samples, SP decon samples.

1340 TATS JD, RF, and BM OSC G. Fife depart site for lunch

1415 Bob Yates on site talked to him about ODC operation

1441 Bob Yates off site

1442 RF, JD, BM and OSC Fife on site.

Late entry at 1340 TAT SP and ME decon samples for HAZCAT ing.

Mark Ezzee

9

06-9004-09

4-09
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A
pling
w/hoods
sample
n monitor
TAT JD
in place
is period
SP decon
t site
DC operation
samples

4-25-90

SAMPLE DA

SAMPLERS: Jim Dollinger R Ferrell

SMPL #	TIME	MTRX	C/G	GC	PRSV	COC #	
1	1125						Full/oil / H_2O semi/viscous
2	1127						OVA 200 ppm / Full
3	1129						OVA 90 ppm Full
4	1153						OVA 7 ppm Full
5	1154						OVA 140 ppm full
6	1156						OVA 260 full
7	1157						OVA BG ~~410~~ ME ~~full~~ ME 1/3 full
8	1159						OVA ~~500~~ ME 410 1/2 full
9	~~1162~~ 1202						OVA 500 3/4 full
10	1204						OVA 450 full
11	1207						OVA 35 full
12	1208						OVA 110 1/2 full
13	1210						OVA 290 1/3 full sud3y
14	1212						OVA 300 2/3 full
15	1214						OVA 1000 10% LEL 1/8 full
16	1217						OVA 1000 10% LEL 1/2 full
17	1230						OVA BG
~~18~~						had to switch to Hnu	Hnu BG No sample
19	1230						~~Hnu 300~~ ME Hnu 300
~~20~~							
21	1231						Hnu 320 3/4 Full crust 6" from bottom
22	1232						Hnu 400 full
23	1233						Hnu 400 3/4 full
24	1235						Hnu 500 5% LEL 1/2 full crust on bottom
25	1238						Hnu 490 7% LEL full
~~26~~							~~Hnu 6~~ Empty
27	1239						Hnu 60 full
28	1240						Hnu 30 full
29	1242						Hnu 30 1/2 full
30	1243						

Mark Ezell

SAMPLERS:

SMPL #

...ENTS

Mark Sell

4-25-90

06-9004-09

SAMPLERS: JD, RF, BM

SMPL #	TIME					COC #	LOCATION/COMMENTS
31	1244						Hho 350 ½ full
32	1244						Hho 80 full
33	1245						Hho BG full
34	1246						Hho 80 full
35	1246						Hho 390 full
36	1247						Hho 300 full
37	1248						Hho 7 full
38	1248						Hho 7 full
39	1256						Hho BG full
40	1252						Hho 20 full
41	1253						Hho 160 full
42	1254						Hho 4 full

Mark Ezell

1450 TATS RF and JD prepare HAZCATing area and supplies in preparation to HAZCAT.
1500 TATS SP, ME, BM and OSC recon leased property to air monitor, radiation monitor, investigate sight.
1520 An estimated 10,000 drums on leased property

Mark Ezell

4-25-90 06-9004-09

ME 1523 ~~1623~~ TATS observe Drum labels - BJ Titan, Champion Chemical, Dow, Exxon.

1527 ME ~~1627~~ 100 Hnu units at bung hole on a drum on Northeast corner of lease property. 25 Hnu units on open bung, 17 Hnu units on Open Bung, 52 Hnu units

1540 TATs note the north gate to the leased property is open to the ajacent property.

1558 Leased property to the South is a residence this is how the property is accessable by automobiles. To the west a pror wire fence sepa the property and next door neighbor.

1600 TAT down grade to level D based on it low readings on the leased property.

1645 TAT ME, SP, BM and OSC discuss how m drums will be sampled on the leased propert The decision was to randomly select drums that were in an easy location to be sampled due to the large number of drums that were st and piled on top of each other.

1705 Drums are being moved from the lease property to the property owned by ODC. TAT observed stained soil and stressed vegitatio around drums and ~~under~~ ME on the soil where drums had laid.

1830 TAT JD and RF finish hazating samples the samples are placed in box and chain of costody sealed until shipment.

1900 TATs ME, JD, RF, SP and BM clean-up and pack equiptment and supplies.

2015 TATs ME, JD, RF, SP BM and OSC exit site for the day.

Mark [illegible]

06-9004-09 | -26-90 | 06-9004-09

Titan, Champion | 832 TATS JD, SP, RF and ME and OSC Fife on site Preparing sampling equiptment, SCBA's, cascade system. JD Calibrating Hnu. JD calibration of O_2/explosimeter.

drum on

25 Hnu units

bung, 52

sed property is

a residence

sable by

wire fence separate

bor.

based on the

ty.

iscuss how many

leased property

drums that

sampled due

that were stac

SITE SAFETY/ WORK PLAN MEETING

TIME: 0900 WEATHER: Clear/hot 75°F

PROPOSED WORK/SAFETY TOPICS:

Numbering of drums in level D booties hardhat steel toe, Drum sampling level B beware of bulging drums, slip trips fall overhead snakes puncture. Dogs, waste minimization. Other workers

SIGNATURE	PRINT NAME	DUTIES/AFFIL.
James M. Dellinger	James M. Dellinger	SSO Air monitoring
Mark Ezell	MARK Ezell	TL
Ray E. Ferrell	RAY E FERRELL	
R Pierce	R Steve Pierce	

: M. Ezell

rom the leased

y ODC. TAT | 830 TATs RF, SP, ME number and place sample jars or drums on the leased property for sampling

ised vegetation

ere soil which | 930 TATS RF, SP, ~~JD~~ ME, OSC, ME prepare for sampling SP will open drums with bung wrench, JD will monitor bung hole with Hnu and O_2/explosimeter. RF will sample drums ~~of~~ after they have been opened and monitored. TAT ME will record Hnu and O_2/explosimeter readings. Sampling will be done in level B.

g samples

and chain of

clean-up and

OSC exit

Mark Ezell

PLE DATA LOG

PLERS:

#	TIME	INTR				C #	LOCATION

Mark Zell

4-26-90

SAMPLERS: RF, SP, JD

SMPL #	TII.	LOCATION/COMMENTS
~~43~~	1035	Hhu 85 - No sample *
[illegible]	1037	Hhu 100
~~45~~	1037	Hhu 3
~~46~~		Hhu 17 No sample
47	1038	Hhu BG
48	1040	Hhu BG
49	1042	Hhu 20 5% LEL
50	1043	Hhu BG
51	1043	Hhu 55
52	1044	Hhu BG
53	1045	Hhu BG
54	1046	Hhu BG
55	1047	Hhu BG
56	1048	Hhu 65
57	1049	~~Hhu~~ could not open
58	1049	Hhu 10
~~59~~	1049	could not open
60	1049	could not open
61	1051	Hhu 60
62	1053	Hhu 70
63	1055	Hhu 30
64	1059	Hhu BG
65	1101	Hhu BG
66	1102	Hhu BG
67	1105	Hhu BG
68	1107	Hhu BG
69	1110	Hhu BG
70	1114	Hhu BG
71	1117	Hhu BG
72	1120	Hhu 7

4-26-90 OL-9004-06

SAMPLE DATA

SAMPLERS: JD, RF SP

SMPL #	TIME	MTRX	C/G		PRSV		
73	1129						Hhv 2
74	1134						Hhv 7
75	1138						Hhv BG
76	1142						Hhv BG
77	1153						Hhv BG
78	1154						Hhv BG
80	1156						Hhv BG
81	1200						Hhv 500

1215 TATs ME, RF, collect samples on drums to be deconed.
1245 TATs JD, RF, SP and OSC depart site
1250 TAT ME decon samples for HAZCATing
1300 Bud Courtney on site he is with Bud Courtney photography. TAT ME discuss with Mr Courtney the objectives of ME needed by the arial photographs.
1330 TATs SP, JD, RF and OSC on site
1335 OSC and B. Courtney discuss arcial photo objectives decide on 4×20×20 pictures (color
1348 Bud Courtney departs site.
1400 TATs RF, JD, SP start dressing out in level B to collect samples from drums in side warehouse.
1540 TAT SP and ME Haz catting samples and RF, JD picking up equipment and organizing van
1700 ME, SP, RF, JD review hazcat results ... best way to composite

06-9004-06

4-26-90

06-9004-06

1743 Determine to composite based on pH this was determined by physical looks of sample and similar characteristics of hazcat results.

1835 SP, ME in level C composite samples label.

1905 JD and RF decon samples and put them in a box with chain of custody seal on it to store until we ship the samples.

1945 SP, ME, JD and RF pack equipment and supplies.

2000 TAT and OSC exit site.

SITE SAFETY/ WORK PL[illegible]

TIME: WEATHER:

PROPOSED WORK/SAFETY TOPICS.

AFFIL.
SSO
TL

Mark [illegible]

bes on drums
rite
TAT ing
th Bud Courtney
th Mr Courtney
l photographs.
rcial photo
tures (color
g out in
drums in side
Samples and
l organizing
l results
nposite

4-27-90 06-9004-09

SITE SAFETY/ WORK PLAN MEETING

TIME: 0630 WEATHER: 68°F windy

PROPOSED WORK/SAFETY TOPICS:

Pack and manifest samples ship via ME Fed Express to lab pack, photo document. Return equipment

SIGNATURE	PRINT NAME	DUTIES/AFFIL.
James Dellinger	James M Dellinger	
Ray E. Ferrell	RAY E. FERRELL	SSO
R S Pierce	R Steve Pierce	TL

CONDUCTED BY: Mark Egel

0630 Meet for breakfast and discuss todays ... and plans each duties

0630 TATs ME ~~and~~ arrive at site and hold safe meeting

0639 TATs RF, JD, SP, ME labeling packing sampl in paint cans and manifesting samples shipment to laboratory. Clean up surround area.

0900 TATs JD and RF exit site to go to Fed Ex to mail samples, return air tanks and Ryder ME ~~truck~~ van.

0930 TATs SP and ME make a final walk over the site for photo documentation and videotaping

0931 OSC on site

Mark Egeler

04-09   4-27-90   06-9004-09

PHOTOGRAPH LOG

CAMERA/LENS (MODEL) Nikon 50mm lens N400NS
SERIAL #. 724903

TIME	PICTURE	ROLL	DIR	SUBJECT	P/W
935	1	2	N	front gate	ME/SP
936	2	2	N	front fence	ME
940	3	↓	SE	front SE corner	↓
945	4		N	front of R Building	
946	5		N	rear west side of site	
950	6		N	residence N behind site	
1000	7		N	residence N behind site	
1001	8		N	NW rear of site	
1003	9		N	front of R Building	
1006	10		S	NE ~~front of~~ storage tank	
1015	11		SE	storage tank and H.T.	
1016	12		N	drums near residence	
1017	13		E	storage tanks	
1018	14		NE	drums near residence	
1020	15		W	water well	
1024	16		N	leased property	
1025	17		N	leased property	
1026	18		N	leased property	
1027	19		N	leased property	
1029	20		N	leased property	
1031	21		W	"	
1032	22		W	"	
1033	23		N	"	
	~~24~~				
	~~25~~				

Mark Ezell

Left margin (adjoining page): days activity; field safety; samples; samples for; surrounding; Fed Ex; ...; over; videotaping

20

4-27-   06-9004-09

1100 TATS SP, MC and OSC exit site to check ou
of hotel return rent car and make fl

Late entry

TATS MC, RF and JD all made flight arrived in
Baton Rouge at 2000 hrs. flight delayed bec
of weather.

Mark Ezell

-09 4-30-90 06-9004-09

out 1100 Fed. Express packages arrive in Baton Rouge

a flight - JD, ME and RF un-pack supplies decon

0300 Finish with deconning equipment

1532 Contact Laboratory to ensure receipt of samples

- They received them.

because

Mark Ell

PHONE CONVERSATION RECORD

Conversation with:

Name Terry James

Company IWC

Address Odessa Tx

Phone

Subject Odessa Drum Company

Date 4 / 20 / 90

Time 1035 AM/PM

TAT Name Mark EZELL

PAN NO. TTX1120SAA, TS1313

TDD NO. 06-9004-09

Notes: Enter piles of Drums that are being removed Site is not secure. A residential subdivision surrounds the site. Site is approx. 10 acres, leased land is approx 5 acres. Enter the site from the ~~site~~ MEI south. Estimates 2000 full drums.

Mark Ezell

CC:

Follow-Up-Action:

recycled paper

ecology and environment

PHONE CONVERSATION RECORD

Conversation with:

Name Greg Fife

Company EPA

Address Dallas Tx

Phone (214) 655-2275

Date 4 / 20 / 90

Time 11 30 AM/PM

TAT Name Mark Ezell

PAN NO. TTX1120SAA

TDD NO. 06-9004-09

Subject

Notes: Talked to Greg about meeting at the Hilton 4-24-90

Mark Ezell

CC:

Follow-Up-Action:

1A. Cost Center: TS1313

1B. Account No.: TTX112OSAA

TAT ZONE II CONTRACT
CONTRACT NO. 68-01-7368
TECHNICAL DIRECTION DOCUMENT (TDD)
ECOLOGY AND ENVIRONMENT, INC.

2. No.: T 06-9004-09

Amendment ______

3A. Priority
- [x] High
- [ ] Medium
- [ ] Low

4A. Estimate of Total Hours: (b) (4) [redacted]
Total Costs:

5A. EPA Site Name: Odessa Drum Co., Inc

7. CERCLIS ID: TXD008012254

5B. SSID No.: N/A

5C. City/County/State: Odessa/Ector/TX

8. Completion Date: 7/10/90

3B. Key EPA Contact:
Name: FIFE
Phone: 2275

4B. Overtime Approved:
- [x] Yes
- [ ] No

4C. Non-dedicated Approved:
- [x] Yes
- [ ] No

6. Source of Funds:
- [x] CERCLA
- [ ] 311
- [ ] UST
- [ ] Other ______

8A. Reference Info:
- [ ] Yes
- [x] No
- [ ] Attached
- [ ] Pick-up

9. Type of Activity:

CWA-311	CERCLA	AS SPECIFIED ABOVE	
[ ] SPCC	[x] Site Assessment	[ ] Special Project	[ ] Quality Assurance
[ ] On-Scene Monitoring	[ ] Removal Funded	[ ] Analytical Project	[ ] Training
[ ] Spill Clean-up Funded	[ ] Removal PRP (AO/CO)	[ ] Preparedness	[ ] Program Management
	[ ] On-Site Monitoring	[ ] UST	[ ] Technical Assistance
		[ ] FEMA	[ ] Information Management

10. General Task Description: Site Assessment at Odessa Drum Company

11. Desired Report Form:
- [x] Formal Report
- [ ] Letter Report
- [ ] Formal Briefing
- [ ] Other (Specify)

12. Specific Elements:

1) Photodocument
2) Air monitoring for volatiles, H_2S etc.
3) Assess number of drums
4) Assess condition of drums.
5) Assess condition and contents of vats and tanks
6) Gather drum Info
7) Coordinate with TWC local office for data gathered
8) Sampling as required
9) Title and Deed Search as required
10) All other Assessment SOP's

13. Interim Deadlines:
7) 4/24
1-5) 4/30

RECEIVED
APR 24 1990
E & E Baton Rouge

14. Authorizing DPO: J Chris Petersen
(Signature)

15. Date: 4/20/90

16. Received by: [x] Accepted [ ] Accepted with Exceptions (Attached) [ ] Rejected

(TATL Signature)

17. Date: 4/23/90

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

DATE: AUG 0 2 1990

SUBJECT: ACTION MEMORANDUM
Request for Removal Action at the Odessa Drum Co. Site
Odessa, Ector County, Texas
Cerclis #TXD008012254
Site ID# Z2
Category of Removal: Time Critical

FROM: Gregory E. Fife
On-Scene Coordinator
Removal/Sites Section (6E-ES)

TO: Robert E. Layton, Jr.
Regional Administrator (6A)

THRU: Russell F. Rhoades
Director
Environmental Services Division (6E)

I. PURPOSE:

This memorandum requests approval for a Removal Action pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) at the Odessa Drum Company Site. This action involves the proper disposal of drums and hazardous materials stored in tanks and vessels. This action meets the criteria for initiating a removal action under Section 300.415 of the National Contingency Plan (NCP) and is not anticipated to exceed the twelve months and $2 million statutory limitations.

II. BACKGROUND:

A. National Significance:

This site is not of national significance.

000004

B. Site Description:

The Odessa Drum Company Site is located on approximately 10 acres just beyond the city limits of Odessa. Two contiguous parcels of land, the facility property and a lease property, comprise the site. The site is situated in a residential/commercial area, with 2 residences located on the lease property and several others immediately adjacent to the site (see Attachment 1). The facility property is enclosed by a chain link fence. The lease property is partially fenced and public access is available via the residential yards on the property.

The site is the location of a former drum recycling operation. Four building structures are located on the site, a small office, processing building and two large storage buildings. Most of the equipment has been removed from the processing building. It is estimated that over 100,000 drums remain on the site.

C. Incident Characteristics:

When the facility was active, drums brought to the site were washed and rinsed, reconditioned, tested, painted and resold. The drums were processed in either caustic or acidic washes to remove the residual material. The wash waters were stored in drums or tanks on-site. Over 2000 drums and 5 large tanks which remain at the site appear to contain the wash liquid and sludges. Approximately 100 additional drums contain the solvents and paint waste from the removal of old paint and repainting of drums prior to recycling.

Additionally, the site contains a large number of drums containing a variety of other hazardous materials. These drums were apparently brought to the facility as part of larger shipments of drums to be recycled. However, since Odessa Drum Company had no mechanisms to handle drums with more than residual amounts of hazardous substances, these drums and others which were not recyclable were stored on the site, primarily the lease property. The immense number of drums, the haphazard stacking and the inaccessibility of the drums prohibits a good estimation of the quantity of these drums and the volume of hazardous materials. It is estimated that in addition to the over 2100 wash liquid drums there are between 2000 to 4000 drums containing hazardous materials.

Several drums containing wash water and unknowns are leaking onto the ground. The stacking of the drums is unsound. The possibility is great of incompatible materials coming into contact from leaks or spillage from falling or failing drums.

D. Quantity and Types of Substances Present:

The drums bear labels from various oil field service companies, petrochemical facilities, solvent manufacturers and a wide range of other products. Acids, bases, alcohols, amines, surfactants and heavy metal based catalysts are typically used in the cited industries.

Sampling and analyses of drummed material and site soil showed the presence of 1,1,1-trichloroethane, naphthalene and pyrene, ethylbenzene, toluene and other multi-substituted benzene compounds. The pH range of the material was from 0.5 to 12.5. These substances are listed as hazardous substances in 40 CFR §302.4. A summary of the analyses can be found in attachment 3.

E. State and Local Authorities Roles:

The Texas Water Commission (TWC) referred the site to EPA Emergency Response Branch after issuing fines to the owner/operator for RCRA violations. TWC reported that the owner/operator indicated he had no intention of completing the clean-up actions.

F. Federal Action To Date:

On April 28, 1990, EPA ERB conducted an investigation on the site. Approximately 100 samples were collected from the drums and tanks. These samples were 'HazCated' for field identification and compatibility. Nine composite samples assembled from the drums and tank samples and one composite soil sample were sent for laboratory analyses.

G. NPL Status:

This site is not presently on the National Priorities List (NPL). The Pre-remedial section is currently developing plans for a preliminary site assessment.

III. THREAT TO PUBLIC HEALTH, WELFARE OR THE ENVIRONMENT

The current conditions at the site meet the following factors which indicate that the site is a threat to the public health, welfare and the environment and a removal action is appropriate under §300.415(b)(2) of the National Contingency Plan. Any or all of these factors may be present at a site yet any one of these factors may determine the appropriateness of a removal action.

A) Exposure to Human Populations, Animals or the Food Chain, §300.415 (b)(2)(i)

There is potential for exposure of human populations and animals to the pyrene, 1,1,1-trichloroethane, naphthalene, benzene and the multi-substituted naphthalene, benzene compounds and other hazardous materials in the drums, tanks and soil. Leaks are visible and the potential for further releases is great. Routes of exposure exist from direct contact of skin, eyes and mucous membranes with the leaking material and contaminated soil, inhalation of vapors emanating from the tanks and drums, and ingestion of contaminated soil.

The short term effects of exposure to the identified substances include dizziness, bronchitis, irregular heart beat and anemia. High concentration exposure over a short time period can damage the liver, kidneys and nerves to the eye and can cause paralysis and death. Long term effects also include damage to the red blood cells which affect their clotting ability. Long term effects can produce permanently reduced coordination and may damage nerves to the internal organs and extremities. The substances identified are also considered carcinogens, mutagens and teratogens.

The released materials and potential releases may migrate off-site and contaminate the surrounding area. Livestock are raised across the street from the site and in the nearby area. The contaminates may enter the food chain if allowed to migrate off-site by run-off, aquifer infiltration or dispersion by storm.

Additionally, the drums are stacked improperly and without regard to the compatibility of the materials. The combination of incompatible materials could result in a spontaneous reaction which would volatilize the hazardous materials or form even more toxic compounds.

B) Contamination of Drinking Water Supplies or Sensitive Ecosystems, §300.415 (b)(2)(ii)

Hazardous compounds leaking from several drums have contaminated soils within portions of the site. If leakage is not controlled, there is a potential for the released contaminates to reach underground water supplies. The Antlers Formation of the Edwards-Trinity aquifer is 200 to 400 feet deep in the vicinity of the site. The Edwards-Trinity aquifer is the major aquifer for public and domestic use. Depth to the first groundwater is 80 to 120 feet. Since the closing of the facility, a resident living on the northwest corner of the site has drilled a new well within 10 feet of the site boundary (15 feet from stored drums). There is definite dead and distressed vegetation in areas where the drums were stored. The contaminates threaten to migrate into the aquifers below the site.

C) Hazardous Substance in Drums or Tanks, §300.415 (b)(2)(iii)

There are hazardous substances in drums, tanks and other bulk storage containers, that have been released and pose a potential threat for future releases. There are 2100 drums of caustic wash water, 5 large storage tanks and 2000 to 4000 drums of various hazardous materials. A large number of the drums are in poor condition and additional leaks are extremely possible.

D) Contaminates in Soils, §300.415 (b)(2)(iv)

The composite soil sample taken showed high concentrations of phenanthrene, pyrene, substituted naphthalenes and other contaminates at or near the surface which may migrate off-site.

E) Weather Conditions That May Cause the Release or Migration of Hazardous Substances,§300.415 (b)(2)(v)

The weather conditions that exist in Odessa may cause hazardous substances or contaminates to migrate or to be released. Odessa is located in an area which is subject to violent weather such as tornados and high wind storms. If a tornado were to hit the site, the spread of contaminates and drums could be catastrophic.

F) Threat of Fire or Explosion, §300.415 (b)(2)(vi)

Drums have been stacked within the facility with no apparent consideration for compatibility. The combination of incompatible materials such as oxidizers and reduction agents, acids and bases could result in an exothermic reaction which in turn could result in a fire and explosion. The resulting fire and vapors could severely impact the nearby residents and threaten their health and welfare.

E) Availability of Other Mechanisms, §300.415 (b)(2)(vii)

The State of Texas referred the site to EPA for lack of response mechanisms available to the State. The time needed for the Superfund Remedial process is too lengthy to mitigate the imminent and substantial threats posed by the conditions at the site.

F) Other Situations or Factors, §300.415 (b)(2)(viii)

The facility property portion of the site is secured with a chain link fence, however the lease property is not completely secured. Two residences are on the lease property and do not have any physical restrictions to access to the site. Young children live in several residences adjacent to the site and have been observed on the site itself.

IV. ENFORCEMENT

See Attachment 4.

V. PROPOSED ACTIONS AND COSTS

A. Proposed Action

The proposed action includes off-site disposal of the hazardous materials currently contained in drums and tanks. The material will be disposed of at facilities in full compliance with all state and federal regulations including EPA's Off-site Disposal Policy. The drums and tanks will be cleaned to RCRA standards and either sent off-site for metal recovery or disposal.

The area of coverage of the drums prohibits an adequate investigation of the soil. The investigation of the extent of soil contamination will be addressed following the removal action of drums and tanks.

B. Summary of Costs:

ERCS Cleanup Contractor	$1,300,000
Cleanup Contractor Contingency (15%)	190,500
Cleanup Contractor Total	$1,490,500
TAT Contractor Costs	$120,000
Extramural Subtotal	$1,610,500
20% Project Contingency	310,000
Total Extramural Cost	$1,920,500
EPA Regional Direct	$25,000
EPA Headquarters Direct (10% of Regional Direct)	2,500
EPA Indirect	50,000
EPA Total	$77,500
TOTAL PROJECT CEILING	$1,998,000

VI. ATTAINMENT OF APPLICABLE OR RELEVANT AND APPROPRIATE STANDARDS (ARARS)

The removal action will be conducted to eliminate the threat or potential threat of a hazardous substance, pollutant or contaminant pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) {42 U.S.C. Sections 9601-9675}, and in a manner consistent with the National Contingency Plan {40 CFR Part 300} as required in {33 U.S.C. Section 1321(c)(2)} and {42 U.S.C. 9605}.

Any hazardous substance, pollutant, or contaminant that will remain on-site must achieve any standard, requirement, criteria, or limitation under any Federal environmental law, including, but not limited to, the Toxic Substances Control Act (TSCA) {15 U.S.C. 72601 et. seq.}, the Safe Drinking Water Act (SDWA) {42 U.S.C. 300f et. seq.}, the Clean Air Act (CAA) 42 U.S.C. 7401 et. seq.}, the Clean Water Act (CWA) {33 U.S.C. 1251 et. seq.}, the Marine Protection Research and Sanctuaries Act {42 U.S.C. 1401 et. seq.}, the Solid Waste Disposal Act {42 U.S.C. 6901 et. seq.}, or any promulgated standard, requirement, criteria, or limitation under a State environmental or facility siting law that is more stringent than any federal standard, requirement, criteria, or limitation contained in a program approved, authorized or delegated by the Administrator and identified to the President by the State. At the completion, a level or standard of control for such hazardous substances or pollutants or contaminants which at least attains such legally applicable or relevant and appropriate standard, requirement, criteria or limitation shall be achieved. Action shall require a level or standard of control which at least attains Maximum Contaminant Levels (MCLs) established under the SDWA and water quality criteria established under section 303 or 304 of the CWA, or where such goals or criteria are relevant and appropriate under the circumstances of the release or threatened release.

The ability and qualifications of all parties conducting the proposed Removal Action will be demonstrated. All parties involved will be experienced to conduct the Removal Action properly and promptly as required by CERCLA.

Transportation of hazardous substance, pollutants, or contaminants will be in accordance with the applicable Department of Transportation regulations, and any additional applicable or relevant and appropriate Local, or State, and/or Federal Regulations.

Disposal of hazardous substances, pollutants, or contaminants will be in accordance with the Resource Conservation and Recovery Act (RCRA) of 1976, {42 U.S.C. 6921 et. seq.}, the regulations promulgated under that act, and EPA's Off-site Disposal Policy, Section 121(d)(3) of CERCLA, 42 U.S.C. 9621(d)(3) as implemented by OSWER Directive 9834.11 (November 13, 1987). Such hazardous substances, pollutants, or contaminants shall only be transferred to a facility which is operating in compliance with section 3004 and 3005 of the Solid Waste Disposal Act (42 U.S.C. 6924 and 6925) (or, where applicable, in compliance with the TSCA or other applicable Federal law) and all applicable State requirements. Requirements under the Occupational Safety and Health Act (OSHA) of 1970 (29 U.S.C. 651 et. seq.) and under the laws of States with plans approved under section 18 of the States OSHA laws, as well as other applicable safety and health requirements will be followed. Federal OSHA requirements included among other things, Hazardous Materials Operation (20 CFR Part 1910, and amended by 54 Fed. Reg. 9317) (March 5, 1989), all OSHA General Industry (29 CFR Part 1910), Construction (29 CFR Part 1926), Shipyard (29 CFR 1915), and Longshoring (29 CFR Part 1918), standards wherever they are relevant, as well as OSHA recordkeeping and reporting regulations, and the EPA regulations set forth in 40 CFR Section 300, relating to the conduct of work at Superfund Sites.

VII. EXPECTED CHANGE IN THE SITUATION SHOULD NO ACTION BE TAKEN

If no action is taken, the drum will continue to deteriorate and release more of the contaminates. The site is susceptible to violent wind storms and the threat of catastrophic releases due to storm damage is substantial. A fire or explosion resulting from the combination of spilled incompatible materials could contaminate a large area on and off site. The contaminates may reach the drinking water aquifers.

IX. IMPORTANT POLICY ISSUES

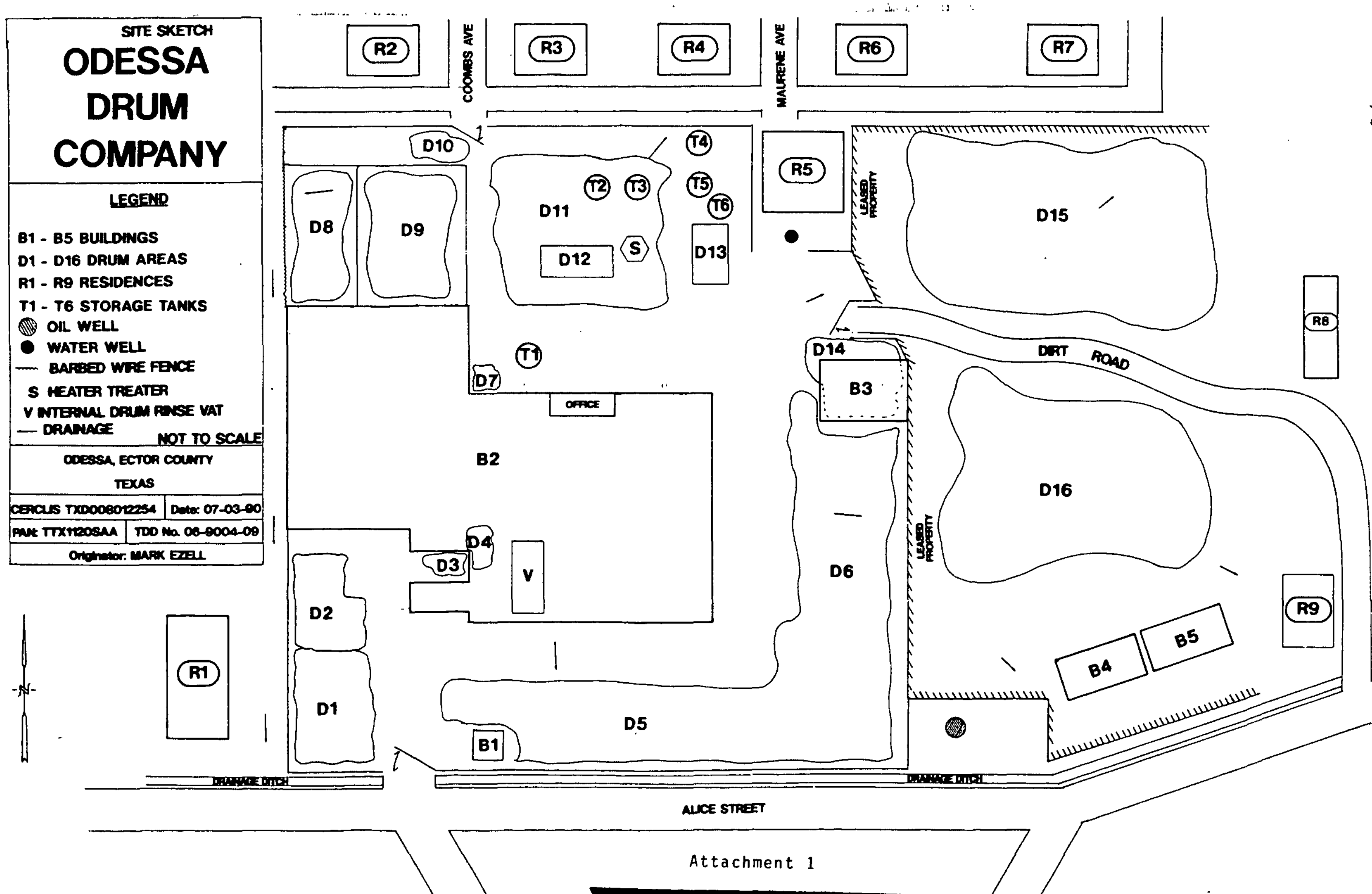
Not applicable.

X. RECOMMENDATION

Because conditions at the site meet the NCP section 300.415(b) (2) criteria for a removal, I recommend your approval of the proposed removal action. The estimated total project costs are $1,998,000 of which $1,490,500 are for extramural cleanup contractor costs. You may indicate your approval or disapproval by signing below.

APPROVE: J. D. Schuller DATE: 8-2-90

DISAPPROVE: ______________________ DATE: ______________________



Attachment 1